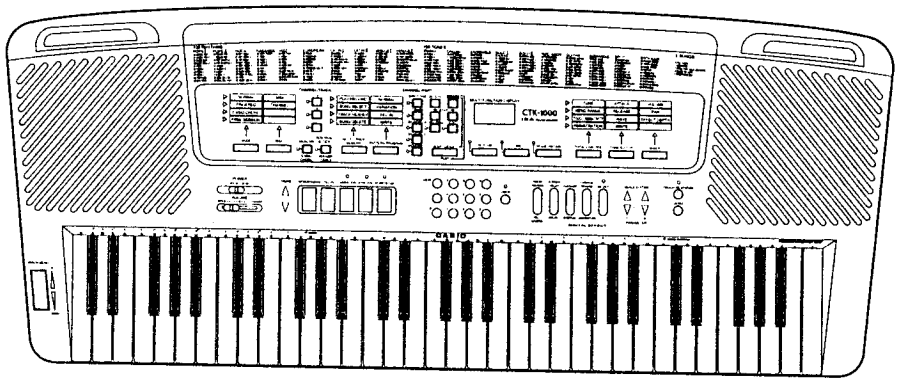
CASIO CTK-1000

OPERATION MANUAL
MANUAL DE OPERACION



英 西

CASIO

Welcome....

To the happy family of satisfied CASIO electronic musical instrument owners!
Your new CTK-1000 comes packed with a selection of powerful features and functions that are sure to make music more fun for everyone. A total of 100 amazingly real rhythms and tones puts plenty of musical versatility at your fingertips. A built-in Multi-Track Memory makes it possible to record multiple-part recordings track-by-track.
To get the most out of these and the many other features and functions of the CTK-1000, be sure to carefully read this manual and keep it on hand for future reference.

Important!

When using batteries, be sure to replace them whenever you notice any of the following symptoms.

- Flashing numbers on the display
  About six minutes after the flashing starts, the keyboard will switch power off automatically.
- Low volume
- Distorted output
- Tone produced is different from selected tone
- Multi-track memory contents or demo tunes do not play correctly

If you continue operation under these conditions, the keyboard may suddenly stop producing sound and change to its initial settings (those set when you first switch power on), or power may suddenly switch off.

NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Main Features

❑ A totally new type of quality sound source for amazingly realistic tones

The new IXA Sound Source brings you 100 sounds of the highest quality available.

❑ Powerful features that let you reach your full musical potential

- **Touch Response**
  Keyboard output responds to subtle changes in keyboard pressure.
- **Digital Effects**
  Eight effects including reverb and chorus built in, each designed to bring out the best in everything you play.
- **Pitch Bender**
  Glide up and down with the flick of the pitch bender wheel.

❑ Auto-Accompaniment function puts an entire back up orchestra at your fingertips

- **100 Rhythms**
  A versatile collection of percussion back ups that keep the music moving.
- **Free Session**
  Full back ups, including chord progressions for each rhythm pattern provide you with the tools to practice your melody lines and solos.

❑ Everything you need to take your creativity to its limits

- **Multi-Track Memory**
  Store up to three melody tracks and one accompaniment track for simultaneous playback.
- **Pattern Programming**
  Edit each part of a selected accompaniment pattern and store up to 10 user patterns in memory for instant recall when you need them.
- **Tone Editor**
  Edit preset tones to create your own originals and store up to 100 user tones in memory.
- **Mixer**
  Full control over parameters for stereo position, digital effect depth, and volume for each accompaniment part.
- **Quick Editor**
  Instant push-button editing of two digital effect parameters.

❑ MIDI compatible

MIDI capabilities lets you connect to a multi-track sequencer for simultaneous play of up to seven tracks plus a rhythm pattern.

CONTENTS

Part 1: Before using the keyboard E-8

■ About the power supply E-8
Using batteries E-8
Using household current E-8
Auto power off function E-8
To cancel the auto power off function E-9
About memory back-up power E-9

■ General Overview of CTK-1000 Operation E-9
Five Main Modes E-9
Three Sub-Modes E-9
Changing Modes E-10
Things to remember when changeing modes... ..... E-11

Part 2: Basic operations E-12

■ Switching on power and selecting tones E-12

■ To change tones E-12
Digital sampling E-12
Polyphony E-13

■ Touch Response E-13
To switch Touch Response on and off E-14

■ Creating your own tones E-14

■ Using the PITCH BEND wheel E-14
Bend range E-14

■ Playing the demo tunes E-15
To start demo tune play E-15
To stop demo tune play E-16

■ Using effects E-16
Types of effects E-16
To select an effect E-16
Changing the depth of an effect E-17
About the QUICK EDITOR E-17

■ Playing rhythms E-18
To select and play a rhythm E-18
Improvising with the preset rhythm patterns E-18
To play intro and ending patterns E-19
About the rhythm indicators E-19
Using synchro start E-20
Creating your own rhythms (Pattern Programming) E-20
Adjusting the volume balance between rhythm and the keyboard (MIXER) E-20

■ Using auto-accompaniment E-21
About the accompaniment keyboard E-21
Using the CASIO CHORD system E-21
To play a CASIO CHORD auto-accompaniment E-21
Using standard fingerings E-22
To play a FINGERED auto-accompaniment E-23
How chord changes are made E-23
Improvising with the preset accompaniment patterns E-24
To begin an accompaniment with a start pattern E-25
To finish an accompaniment with an ending pattern E-25
Switching accompaniment parts on and off E-26
About the mixer E-26
About the Pattern Program E-26

■ Using FREE SESSION E-27
To use FREE SESSION E-27
Changing the key of the FREE SESSION accompaniment E-27
To finish FREE SESSION play with an ending pattern E-28

Part 3: Advanced Operations E-29

■ Precautions about memory back-up E-30

■ Using the Tone Editor E-30
Tone Editor Operation Outline E-30
Getting ready E-30
To use the Tone Editor E-30
To recall a user tone E-31
About editable parameters E-33

■ Using the Effect Editor E-33
Getting ready E-34
To use the Effect Editor E-34
About editable parameters E-34

■ Using the MIXER (VOLUME/PAN/EFFECT DEPTH) E-35
MIXER Operation in the Normal Mode E-37
To use the MIXER in the Normal Mode E-37
MIXER Operation in the Auto-Accompaniment Mode E-38
To use the MIXER in the Auto Accompaniment Mode E-41

■ Using the Registration function E-41
Registration Function Operation Outline E-45
Getting ready E-45
To use the Registration Function E-45
Recalling Registration setups E-46
Getting ready E-46
To recall Registration setups E-47

■ Using the Pattern Programming function E-47
Types of editable patterns E-47
Pattern Programming Outline E-47
Getting ready E-50
To use pattern programming E-51
To recall a user accompaniment pattern or rhythm pattern E-51
To recall a user accompaniment pattern or rhythm pattern E-61

Part 4: Using the Multi-Track Memory E-62

■ Read this important information about memory back-up E-62
■ What is Multi-Track Memory? E-62
■ Basic Multi-Track Memory operation E-62
To record to Multi-Track Memory E-63
■ Multi-Track Memory data and capacity E-65
■ Recording to Multi-Track Memory E-66
Multi-Track Memory Operation Outline E-66
Getting ready E-66
To record to Multi-Track Memory E-67
To record the ACCOMPANIMENT track E-67
To record MELODY 1 track E-69
To record MELODY 2 track E-72
To record MELODY3 track E-72
■ To playback from the Multi-Track Memory E-72
■ Playing along with the Multi-Track Memory E-73
To play along with the Multi-Track Memory E-73
■ Editing Multi-Track Memory contents E-75
To re-record an entire track E-75
About step editing E-76
To step edit a track E-76
■ Deleting Multi-Track Memory contents E-78
To delete a single track E-78
To delete an entire song E-79

Part 5: MIDI E-80

■ What is MIDI? E-80
■ What the MIDI Mode allows you to do E-80
■ About the MIDI terminals E-81
■ What is a MIDI channel? E-81
■ To set the basic channel E-81

■ MIDI multi-channel receive E-82
Specifying a tone for each channel E-82
To specify a tone for each channel E-82
Switching specific channels on and off E-82
To adjust the volume balance of each channel E-83
■ Local control settings E-83
To switch local control on and off E-84
■ Switching between external and internal clock E-84
To switch between internal and external clock E-85
■ Transferable MIDI data E-85
NOTE ON, NOTE OFF, NOTE NUMBER, VELOCITY Data E-85
PROGRAM CHANGE Data E-85
CONTROL CHANGE Data E-85
CLOCK MESSAGE Data E-86
..... E-87

Part 6: Other Settings E-88

■ To tune the keyboard E-88
■ To set the bend range E-89
■ To set the touch sensitivity E-90
■ Initializing the keyboard E-90
To initialize the keyboard E-91

Part 7: Technical Reference E-92

■ Troubleshooting E-92
■ Care of Your Keyboard E-93
■ Control Locations E-94
Front panel control locations E-94
Control buttons in each Mode E-94
External Connections E-95
■ Specifications E-97
..... E-98

APPENDIX A-1

■ Free Session Chord Progression A-1
■ USER TONE LIST A-4
■ USER RHYTHM A-4
■ REGISTRATION A-4
■ List of Fingered Chord A-5

Part 1 Before using the keyboard

Be sure to read the contents of this part of the manual before using the keyboard for the first time.

■ About the power supply

This keyboard features a two-way power supply that lets you use either household AC current or batteries.

Using batteries

This keyboard can be powered by 6 D size (SUM-1/R20KP) manganese dry cell batteries. Make sure that the **POWER switch** is set to the OFF position when installing batteries.

1. Open the battery compartment cover on the bottom of the unit.
2. Load new batteries taking care that the plus (+) and minus (–) poles are facing in the correct directions.
   - Standard battery life is approximately 3 hours (SUM-1) / 8 hours (AM-1).

Important

Any of the following conditions indicates that battery power is low and that you should replace batteries or shift to one of alternate power sources as soon as possible.

- Flashing numbers on the display
  About six minutes after the flashing starts, the keyboard will switch power off automatically.
- Low volume
- Distorted output
- Tone produced is different from selected tones
- Multi-track memory contents or demo tunes do not play correctly.

If you continue operation under these conditions, the keyboard may suddenly stop producing sound and change to its initial settings (those set when you first switch power on), or power may suddenly switch off.

Precautions

Incorrectly using batteries can cause them to leak or burst, and may damage your unit. Note the following precautions:

- Be sure that the plus (+) and minus (–) poles are facing in the correct directions.
- Do not mix battery types.
- Do not mix new batteries with old ones.
- Never leave dead batteries in the battery compartment.
- Remove batteries when not using the unit for extended periods.
- Never try recharge the batteries that are specified for the power supply of this unit.
- Do not expose batteries to direct heat, let them become shorted or try to take them apart. (If a battery leaks, clean out the battery compartment of the unit immediately, taking care to avoid letting the battery fluid come into direct contact with your skin.)

Using household current

An AC adaptor (AD-12, optional) is required when using household current. Use only genuine CASIO adaptor with the same voltage rating (100, 117, 220, or 240 V) as the power supply in your area to prevent damage to internal components. Be sure to turn the power of the unit off before you connect the adaptor to the unit. Plug the AC adaptor into the AC outlet and the cord into the unit. This will automatically cut off the battery power supply.

Auto power off function

Power is automatically cut off approximately 6 minutes after the last operation of the unit. Power supply can be restored by switching power OFF and then ON again.

- **To cancel the auto power off function**
  To cancel the auto power off function, turn the POWER switch ON while holding down the TONE button. The keyboard will remain ON until you turn OFF manually.

About memory back-up power

This keyboard uses batteries to retain the data listed below*. Remember however that if the batteries go dead, the data you have stored in memory will all be lost. To avoid this, keep batteries loaded in the unit and be sure to supply power through an AC adaptor whenever you replace batteries.

*Such data as:

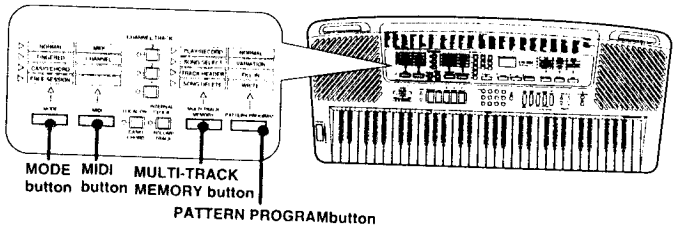
- Tones edited using the Tone Editor
- Set ups created using the Registration function
- Effects changed using the Effect Editor
- User rhythms created using the Pattern Program
- Songs recorded in Multi-Track Memory

■ General Overview of CTK-1000 Operation

This section provides a general overview of the main CTK-1000 operations. It mainly focuses on the different buttons and indicators on the keyboard's console, and how they relate to each other. it also tells you how to change between different modes. Be sure to read this section before using the keyboard for the first time.

Five Main Modes

With the CTK-1000, you must enter various modes in order to perform certain operations. This section describes the five main modes of the CTK-1000.



The four buttons shown in the above illustration provide you with access to the five main modes, as described below.

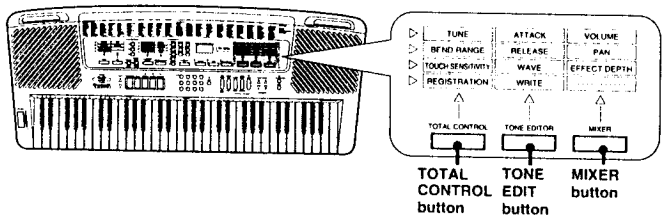
Button	Mode	Description
MODE	Normal	In this mode, the keyboard plays like a standard piano or organ. You can select the tone and rhythm you want to use for play in this mode.
	Auto-Accompaniment	In this mode, you can use the Auto-Accompaniment function described on page *E-21*.

MIDI	MIDI	This mode lets you use the keyboard in combination with a connected MIDI musical instrument or other MIDI device. You cannot use the keyboard by itself in this mode.
MULTI-TRACK MEMORY	Multi-Track Memory	In this mode, you can use the Multi-Track memory described on page *E-62*.
PATTERN PROGRAM	Pattern Program	In this mode, you can use the Pattern Programming function described on page *E-47*.

- Whenever you switch the keyboard's power on, it automatically enter the Normal mode. Then you can use any of the four buttons described above to enter the other modes.
- Be sure to note that the MODE button is used to select between two modes. The other buttons select only the one mode assigned to them.

Three Sub-Modes

In addition to the five main modes, there are three sub-modes as described below.



Button	Mode	Description
TOTAL CONTROL	Total Control	This mode is used for tuning and for other adjustments that affect all keyboard functions.
TONE EDIT	Tone Edit	With this mode, you can edit the parameters of preset tones and create your own original user tone.
MIXER	Mixer	This mode is for setting parameters for the volume balance, stereo position, and effect depth of parts.

Changing Modes

Whenever you perform a procedure on this keyboard, you must first select the mode and sub-mode required for that procedure. You can always tell which mode and sub-mode is selected by seeing what indicators are lit on the console.
The following example takes you through a number of modes, illustrating how they are related to each other.

1. Switch power on, and the keyboard automatically enters the Normal mode.
2. Press the MIDI button, and the keyboard enters the MIDI Mode. Note how the position of the lit indicator changes.
3. Press the MODE button to return to the Normal Mode.
4. Press the MODE button again to enter the Auto-Accompaniment Mode. At this time, the accompaniment keyboard's setting is FINGERED.
5. Press the TONE EDITOR button, and keyboard enters the Tone Editor Sub-Mode. Note that the indicator above the MODE button remains lit.
6. Press the MODE button. The keyboard exits the Tone Editor Sub-Mode and returns to the Accompaniment Mode.
   - As shown in the above example, when you enter a sub-mode from a main mode, the main mode's indicator (Accompaniment Mode in the above example) remains lit. This is to indicate which main mode you should return to after you finish your sub-mode operations.

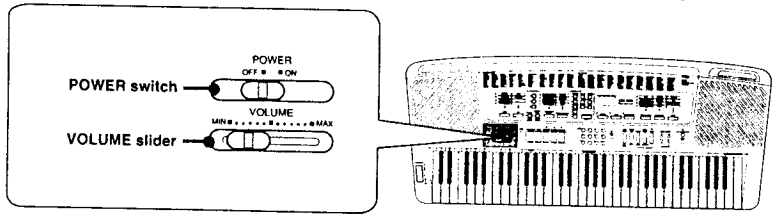
Things to remember when changing modes...

- You must remember that when you change parameters in a mode, sometimes these changes are brought along when you enter a different mode. When you go from the MIDI Mode to the Accompaniment Mode, for example, the MIDI Mode's Mixer settings are applied to the Accompaniment Mode as well. This may result in the volume setting for the parts played in the Accompaniment Mode to be too loud.
- The Accompaniment parts can be restored to their correct volume setting by selecting a different rhythm, then switching back to your original rhythm selection if desired.
- If you go past the Accompaniment Mode's FREE SESSION setting when pressing the MODE button, the tone number, rhythm number and tempo setting automatically switch to preset default values (25, 00, and 110 respectively). These defaults are then brought along to the next mode you select. If you change from the Auto Accompaniment's FINGERED setting to the Normal Mode, for example, you are forced to pass FREE SESSION. This means that the default values given above are automatically applied in the Normal mode. For details, see page *E-27*.
- Switching modes while an auto-rhythm or auto-accompaniment is running will cause the rhythm or accompaniment to shut off. Be sure to choose your desired playing mode prior to starting the rhythm.

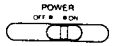
Part 2 Basic operations

This part of the manual provides you with the basic information you need to use your keyboard.

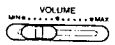
■ Switching on power and selecting tones



1. Slide the POWER switch to the ON position.



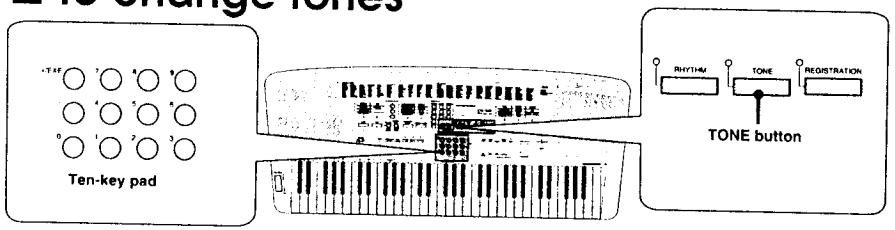
2. Adjust the volume.



- Be sure to adjust the volume to a lower setting before playing the keyboard.

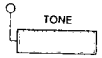
3. Press the keyboard keys.
   - Adjust the volume to the level you want while playing on the keyboard.
   - 01 PIANO is the tone that is automatically selected whenever you switch power on.

■ To change tones



1. Look at the tone list printed on the keyboard's console and find the one you want.
   - A total of 100 tones are available.

2. Press the TONE button.



- When you do, the TONE indicator lights.

3. Use the 10-key pad to input the tone number for the tone you want to use. To select 24 TRUMPET for example, press 3 and then 4.

- The number of the tone you select appears in the display.
- You can also use +/EXE and – to change the tone number. Pressing the +/EXE button increases the displayed tone number by one, and pressing – decreases it by one.

- When you press a number button in the 10-key pad, the number you input "pushes" the displayed tone number to the left. If 00 is shown on the display and you input 34, the display changes to 03 when you press 3, and then to 34 when you press 4.
- If you change the tone number while you are playing on the keyboard, the note you are playing is cut off as soon as the tone changes.
- Note that you can only change the tone (in step 3 on page *E-12*) when the TONE indicator is lit.

- If you go past the FREE SESSION setting when pressing the MODE button, the tone number automatically switches to tone number 25. This is one of the default settings that are automatically selected whenever you enter the Free Session Mode. For details on the defaults, see page *E-29*.

Digital sampling

A number of the tones that are available with this keyboard have been recorded and processed using a technique called digital sampling. To ensure a high level of tonal quality, samples are taken in the low, mid, and high ranges and then combined to provide you with sound that is amazingly close to the original. You may notice a very slight differences in volume or sound quality for some tones when you play them at different positions on the keyboard. This is an unavoidable result of multiple sampling, and it is not a sign of malfunction.

Polyphony

The term polyphony refers to the maximum number of notes you can play at the same time. The CTK-1000 has 16-note polyphony, which includes the notes you play as well as the rhythms and auto-accompaniment patterns that are played by the keyboard. This means that when a rhythm or auto-accompaniment pattern is being played by the keyboard, the number of notes (polyphony) available for keyboard play is reduced.

Important!

- Tone 41 SYNTH-LEAD2 is designed for single-note play only, and so it has only 1-note polyphony. You cannot play chords with this tone.

■ Touch Response

Touch Response allows the keyboard to match the strength of the tone produced with the amount of strength you use to strike the key, which is actually the VELOCITY or speed with which you strike the key. Note that beginners or those with insufficient strength in their fingers can use the procedure described below to switch Touch Response off.

To switch Touch Response on and off

Press the TOUCH RESPONSE button to switch Touch Response on and off.

- When Touch Response is switched off, the notes produced by the keyboard are not affected by keyboard pressure.
- Touch Response is on when the TOUCH RESPONSE indicator is lit.
- Note that Touch Response is always switched on automatically whenever you switch power on.
- You can also adjust the Touch Response sensitivity using the procedures described on page *E-90*.

Notes

- Touch Response is disabled in the left hand section while you are using auto-accompaniment.
- You can switch Touch Response off while a demo tune (page *E-15*) is playing and when you are recording to Multi-Track Memory (page *E-62*).
- You cannot switch Touch Response off during a MIDI data transfer (page *E-85*) or during playback of a Multi-Track Memory recording (page *E-72*) made with Touch Response switched on.

■ Creating your own tones

In addition to the 100 preset tones, you can create your own sounds by altering the parameters of the presets. Up to 100 of these user tones can be stored in memory for instant recall when you need them. See page *E-30* for details on creating your own tones.

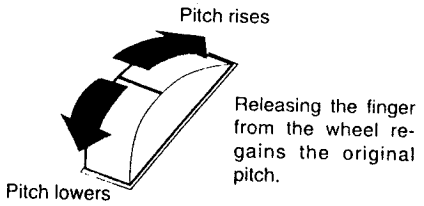
■ Using the PITCH BEND wheel

Rotating the PITCH BEND wheel raises and lowers the pitch of the tones you play on the keyboard. Use it to add interesting effects to your performances.

Tones that are best suited for use with the PITCH BEND wheel

Use tones that continue to sound as long as you keep a keyboard key pressed, such as the STRINGS, SYNTH-LEAD and SYNTH BASS tones.

PITCH BEND wheel techniques



- You can add vibrato to a note by moving the PITCH BEND wheel slightly forward and back as the note is sounding. When you release the wheel, the note returns to its original status.
- Try changing the pitch of a note after it is sounding.
- Another interesting effect is produced by turning the PITCH BEND wheel before pressing the keyboard. Then, after the note starts to sound, either release the PITCH BEND wheel or change its setting.

Bend range

- The PITCH BEND wheel is initially set for a range of two have notes in either direction (up or down). You can increase this up to a range of four half notes (page *E-89*).

■ Playing the demo tunes

This keyboard comes with the following five pre-recorded demo tunes that you can use for practice or simply for your listening enjoyment.

Tune Number	Name	Play Time
0	The Throb	1:57
1	Maunatea	3:20
2	Girls That Walk Like Boys	2:00
3	Samba Da Capo	2:36
4	Something Day	2:46

Tune 0, 1, 2, and 4 were composed by Edward Alstrom, who is a member of the musical instrument development staff at CASIO America.

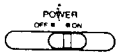
Important!

Note the following important points before you play a demo tune.

- The DEMO button is not operational while you are recording to or playing back from Multi-Track Memory (page *E-62*) or Pattern Program (page *E-47*).
- The volume balance for each part, tone number, and effect are changed to preset parameters whenever you play a demo tune. Note also that the settings for the last demo tune played remain in effect when you stop demo tune play. Because to this, you may find that volume is very low after demo tune play. To correct this, either switch power off and then on again to reinitialize the settings, or use the Mixer to change the melody volume setting.

To start demo tune play

1. Switch power on and adjust the volume level.



2. Press the DEMO button.

- Demo tune play continues in sequence and endless loop until you switch it off.
- The current demo tune number is shown on the display.
- The keyboard is inoperable while the demo tune is playing.

3. You can change the demo tune being played by pressing +/EXE (to advance) or - (to move back).

To stop demo tune play

Press the DEMO button again to stop demo tune play.

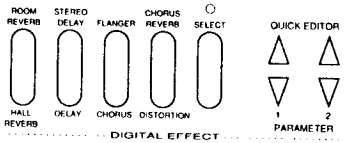
■ Using effects

In addition to the various acoustic effects that you can apply to keyboard and Auto Accompaniment tones, this keyboard also provides you with a total of eight digital effects.

Types of effects

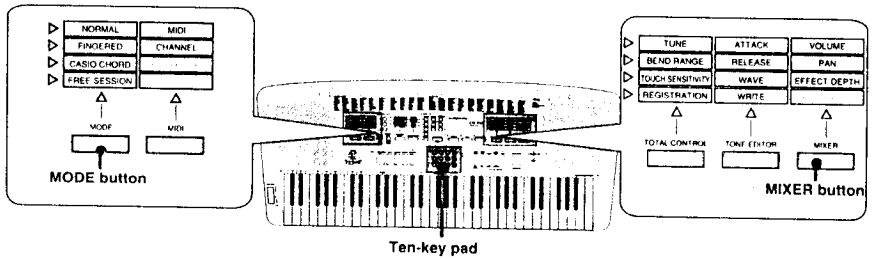
Effect	Description
HALL REVERB	Reverb effect with all the depth of a large concert hall. This effect is automatically selected whenever you switch power on.
DELAY	An echo effect that causes the sound to repeat.
CHORUS	Adds depth and breadth to the sound.
DISTORTION	Distorts the sound.
ROOM REVERB	Adds the acoustics of a live club.
STEREO DELAY	Stereo echo that causes the sounds to alternate between the two speakers.
FLANGER	Adds depth and characteristic sharpness to the sound.
CHORUS REVERB	Applies two effects (chorus and reverb) at the same time.

To select an effect



Each Digital Effect button is assigned two different effects. When the SELECT indicator is lit, it means that the buttons are assigned the effects marked above them. When the SELECT indicator is not lit, the lower effects can be selected. You can switch the SELECT indicator on and off by pressing the SELECT button.

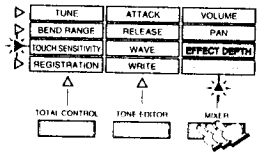
Changing the depth of an effect



You can use the following procedure to change the depth of each effect.

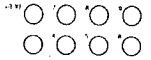
1. Use the procedure described under "To select an effect" to select the effect whose depth you want to change.

2. Press the MIXER button three times to select EFFECT DEPTH.



- The current MIXER setting for the effect that you selected is shown on the display.

3. Use the 10-key pad to set the effect depth that you want, within the range of 0 to 3.



0 : No effect applied
1 : Light
2 : Medium (power on default)
3 : Heavy

4. Press MODE.

- At this time the MIXER indicator goes out and the keyboard returns to the mode it was in before you pressed MIXER.
- Note that any changes you make to effect depths are cleared when you switch power off.

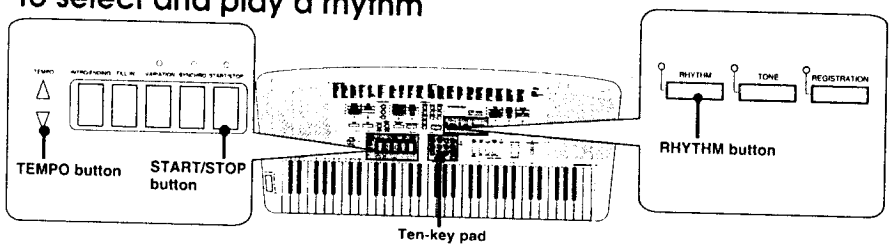
About the QUICK EDITOR

The QUICK EDITOR lets you make minute adjustments to various effect parameters. Simply press the QUICK EDITOR button and then use the PARAMETER buttons to make your changes. The parameters you can change depend on the effect you are editing. For full details on using the QUICK EDITOR, see page *E-35*.

■ Playing rhythms

This keyboard features a collection of 100 exciting built-in rhythm patterns. Each pattern provides percussion back up for all your performances.

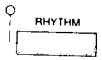
To select and play a rhythm



1. Make sure that power is switched on and that volume is adjusted to a comfortable level.

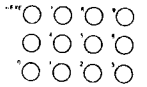
2. Look at the rhythm list printed on the keyboard's console and find the one you want.
   - A total of 100 rhythms are available.

3. Press the RHYTHM button.



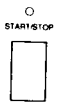
   - When you do, the RHYTHM indicator lights.
   - The rhythm 00 DANCE POP is automatically selected whenever you switch power on. This is indicated by the numbers "00" on the display.

4. Use the 10-key pad to input the rhythm number for the rhythm you want to use. To select 34 HIP HOP for example, press 3 and then 4.

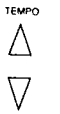


   - The number of the rhythm you select appears in the display.
   - Note that the rhythm may not change immediately. Sometimes, the keyboard must finish play of the current phrase before it can change to another pattern.
   - You can also use +/EXE and – to change the rhythm number. Pressing the +/EXE button increases the displayed rhythm number by one, and pressing – decreases it by one.
   - When you press a number button in the 10-key pad, the number you input "pushes" the displayed rhythm number to the left. If 00 is shown on the display and you input 34, the display changes to 03 when you press 3, and then to 34 when you press 4.
   - Note that you can only change the rhythm (in step 4, above) when the RHYTHM indicator is lit.

5. Press the START/STOP button to start play of the selected rhythm.



6. Use the TEMPO buttons to adjust the tempo of the rhythm.



   - When you press one of the TEMPO buttons, the current tempo appears as a value on the display. The value indicates the number of beats per minute. The display returns to normal when you release the TEMPO button.
   - Each time you press one of the TEMPO buttons, the tempo setting changes one step, within the range of 40 to 255.
   - Holding down either of the TEMPO buttons changes the tempo setting at high speed.
   - To reset the tempo to the standard value of 120, press both of the TEMPO buttons at the same time.

7. To stop the rhythm play, press the START/STOP button again.

   - If you go past the FREE SESSION setting when pressing the MODE button, the rhythm number automatically switches to rhythm number 00, and tempo changes to 110. These are default settings that are automatically selected whenever you enter the Free Session Mode. For details on te defaults, see page *E-29*.

Notes

- If you press the MODE button while a rhythm is playing, the rhythm stops automatically.
- If you enter the Mixer Mode (see page *E-37*) while a rhythm is playing, the rhythm stops automatically.

Improvising with the preset rhythm patterns

The FILL-IN and VARIATION buttons provide you with the ability to improvise somewhat with the preset rhythm patterns.

- Pressing the FILL-IN button inserts a one-measure fill in pattern.

- Pressing the VARIATION button (which causes the VARIATION indicator to light) changes the percussion (as well as the auto-accompaniment) part of the pattern. The new variation is repeated until you press the VARIATION button again.

To play intro and ending patterns

- When no rhythm is playing, press the INTRO/ENDING button instead of the START/STOP button. When you do, an intro pattern is played to start out the selected rhythm pattern.
- Pressing the INTRO/ENDING button while a rhythm pattern is playing plays an ending pattern after which play of the pattern stops.
- The length of the intro pattern varies according to the rhythm selected.

About the rhythm indicators

As a rhythm pattern is playing, the SYNCHRO and START/STOP indicators flash as illustrated below.

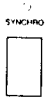
		○ SYNCHRO	○ START/STOP
Measure 1	Beat 1	●	●
	Beat 2	○	●
	Beat 3	○	●
	Beat 4	○	●
Measure 2	Beat 1	●	○
	Beat 2	○	●
	Beat 3	○	●
	Beat 4	○	●

The indicators continue to flash as shown above for the following measures.

Notes

- In the above illustration, ● means lit while ○ means unlit.
- For 3-beat rhythms, the fourth beat shown above is skipped.
- When you press the SYNCHRO or FILL-IN pattern, the beat count shown by the indicators start from Beat 1 of Measure 1 after the lead-in or fill-in pattern is complete.

Using synchro start



If you press the SYNCHRO button in place of the START/STOP button in Step5 on page *E-19*, rhythm pattern play will start automatically whenever you press any of the keys shown in the illustration below.

Creating your own rhythms (Pattern Programming)

In addition to the 100 preset rhythms, you can also create your own "user rhythms," and store up to ten of them in memory. For details on how to do this, see page *E-47*.

Adjusting the volume balance between rhythm and the keyboard (MIXER)

When you play along with a rhythm, your melody and the rhythm pattern are produced as two separate parts. You can individually adjust the volume balance for the parts to produce exactly the mix you want. For details on how to do this, "Using the MIXER (VOLUME/PAN/EFFECT DEPTH)" on page *E-37*.

■ Using auto-accompaniment

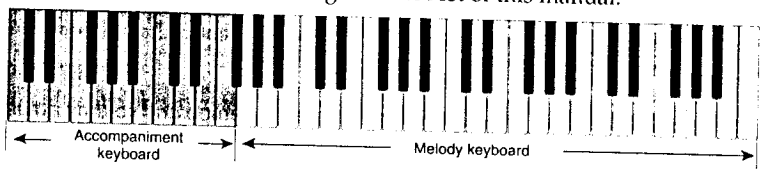
This keyboard features 100 accompaniment patterns that let you add full accompaniments to your performances automatically.

With auto-accompaniment, part of the keyboard is reserved as an "accompaniment keyboard." As you play your chords on the accompaniment keyboard, the accompaniment pattern adjusts automatically to follow the progression you play.

You get a choice between three different methods for chord play. FINGERED lets you play chords as you normally do, while CASIO CHORD makes it possible to play fully formed chords with one finger. You also can choose FREE SESSION when you want leave the accompaniment up the keyboard and concentrate on ad-libbing a melody.

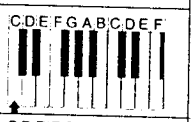
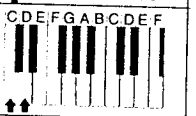
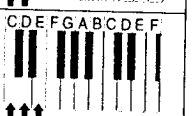
About the accompaniment keyboard

The lower (left) 1.5 octaves are reserved for use as an "accompaniment keyboard" whenever you select CASIO CHORD, FINGERED, or FREE SESSION with the MODE button. The panel above the accompaniment keyboard keys are marked with the names of the notes they play. The remainder of the keyboard (the part that is not included in the accompaniment keyboard) is called the "melody keyboard." Please remember these terms, because they will be used throughout the rest of this manual.



Using the CASIO CHORD system

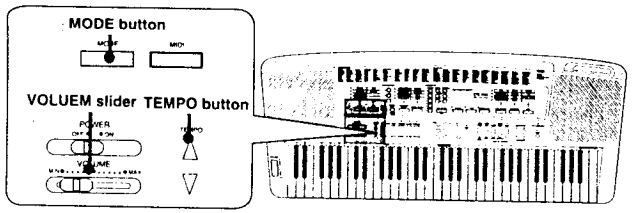
The CASIO CHORD system lets you easily play the four main types of chords. Play of chords is simplified as shown in the chart below.

Keys	Chord Type	Example
Pressing **one** accompaniment keys	Major chord	C (C Major Chord) 
Pressing **two** accompaniment keys	Minor chord	Cm (C Minor Chord) 
Pressing **three** accompaniment keys	Seventh chord	C7 (C Seventh Chord) 
Pressing **four** accompaniment keys	Minor seventh chord	Cm7 (C Minor Seventh Chord)

Note

- The bottom (leftmost) note that you play determines the name of the chord. If the bottom note is a C for example, the keyboard produces a C chord.

To play a CASIO CHORD auto-accompaniment

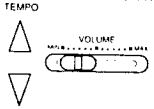


1. Use the MODE button to select CASIO CHORD.

2. Select an auto-rhythm as described under "To select and play a rhythm" on page *E-18*.

3. Press either one or up to four keys on the accompaniment keyboard, and the corresponding accompaniment starts to play automatically.
   - If you want to start with the rhythm pattern only, press the START/STOP button to start, instead of an accompaniment keyboard key. Then when the rhythm pattern reaches the point where you want to start full accompaniment, press an accompaniment keyboard key or keys to start the full accompaniment.

4. Use the TEMPO buttons and VOLUME slider to make tempo and volume adjustments.



5. Continue pressing keys on the accompaniment keyboard to play your chord progression.

Important!
- The chord progression may not change immediately when you press another accompaniment keyboard key. This is because the keyboard may wait for the current note to finish before changing. See "How chord changes are made" on page *E-24* for details.

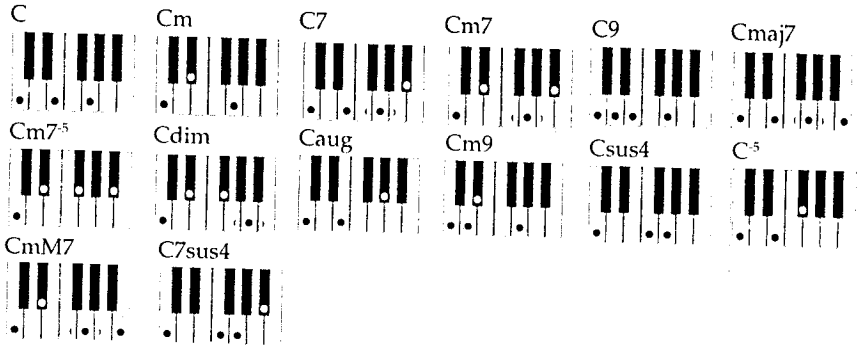
6. To stop auto-accompaniment play, press the START/STOP button again.

Notes
- If you press the MODE button while an Auto-accompaniment pattern is playing, the pattern stops automatically.
- If you enter the Mixer Mode (see page *E-37*) while an Auto-accompaniment pattern is playing, the pattern stops automatically.

Using standard fingerings

The FINGERED mode lets you play a wider variety of chords. In this mode, you can start play of an accompaniment pattern by pressing three or four of the accompaniment keyboard keys.

This keyboard is capable of recognizing 14 different chords. The following shows the fingerings of these chords with a root of C. Note that you can omit the fifth notes (which are shown inside parentheses in the illustrations below) to produce 7, m7, maj7, add9, and m add9 chords.

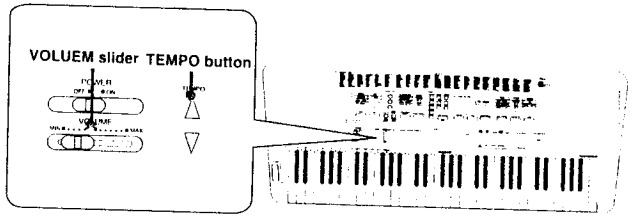


Important!
- If you play one or two notes only in the left hand, or three notes that do not make up a recognizable chord formation (for example, C-D-D#), no sound will be produced. FINGERED MODE requires a conventional three or four-note chord formation to produce an auto-accompaniment. Also, note that auto-chords only work in conjunction with rhythm patterns, and not independently of them.

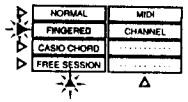
Notes
- The above examples show only one of the possible fingerings for each chord. Note that you can play the notes that form a chord in any combination. Each of the following fingerings for example, produces the same C chord.

- See the "List of fingered chords" on page *A-5* for information on the fingerings of chords for all roots.

To play a FINGERED auto-accompaniment



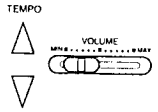
1. Use the MODE button to select FINGERED.



2. Select an auto-rhythm (see "Playing rhythms" on page *E-18*).

3. Play the chord you want on the accompaniment keyboard, and the corresponding accompaniment starts to play automatically.
   - If you want to start with the rhythm pattern only, press the START/STOP button to start, instead of accompaniment keyboard keys. Then when the rhythm pattern reaches the point where you want to start full accompaniment, press the chord on the accompaniment keyboard to start the full accompaniment.

4. Use the TEMPO buttons and VOLUME slider to make tempo and volume adjustments.



5. Continue pressing keys on the accompaniment keyboard to play your chord progression.

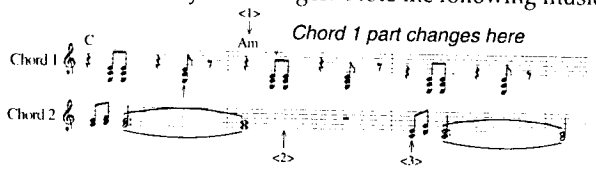
Important!
- The chord progression may not change immediately when you press another accompaniment keyboard key. This is because the keyboard may wait for the current note to finish before changing. See "How chord changes are made" on page *E-24* for details.

6. To stop auto-accompaniment play, press the START/STOP button again.

Notes
- If you press the MODE button while an Auto-accompaniment pattern is playing, the pattern stops automatically.
- If you enter the Mixer Mode (see page *E-37*) while an Auto-accompaniment pattern is playing, the pattern stops automatically.

How chord changes are made

The chord changes whenever you play a chord on the accompaniment keyboard while an accompaniment pattern is playing. Sometimes however, some of the parts that make up an accompaniment pattern do not change as soon as you play a chord. This is because accompaniment patterns are designed so that some parts must play a specified number of beats before they can changes. Note the following musical score.



As noted above, the score starts out with a C chord. If you then play an Am chord at Point 1, the change to Am does not actually occur until Point 3 for chord 2 part. This is because the accompaniment is designed to complete the chord at Point 2 before making the change. The Chord 1 part of the accompaniment pattern, however, changes where noted in the score.

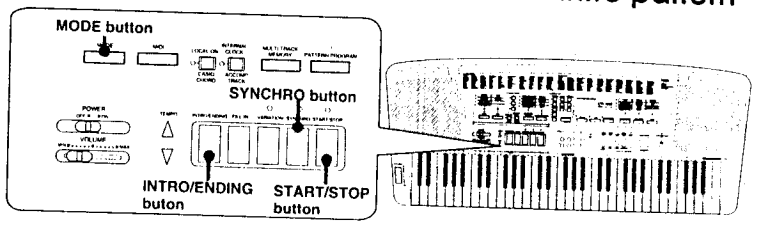
Improvising with the preset accompaniment patterns

The FILL-IN and VARIATION buttons provide you with the ability to improvise somewhat with the preset accompaniment patterns.

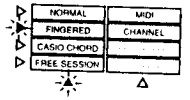
- Pressing the FILL-IN button inserts a one-measure fill in pattern.

- Pressing the VARIATION button (which causes the VARIATION indicator to light) causes subtle changes in all parts of the pattern making it appropriate for solo, bridge, or chorus sections of a song. The new variation is repeated until you press the VARIATION button again.

To begin an accompaniment with an intro pattern



1. Use the MODE button to select either CASIO CHORD or FINGERED.



2. Select an auto rhythm using the procedure described under "To select and play a rhythm" on page *E-18*.

3. Press the SYNCHRO button. At this time the indicator above the button lights.

4. Press the INTRO/ENDING button. At this time the SYNCHRO button indicator goes out and the START/STOP indicator lights.

5. Play a chord on the accompaniment keyboard using the correct technique according to the mode (CASIO CHORD or FINGERED) you selected in Step1 above.

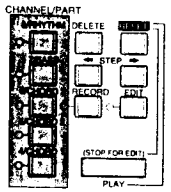
6. To stop play of the accompaniment pattern, press START/STOP again.

To finish an accompaniment with an ending pattern

While an Auto Accompaniment pattern is playing, press the INTRO/ENDING button to stop it instead of the START/STOP button. Auto Accompaniment play will stop after an ending pattern.

Switching accompaniment parts on and off

Each accompaniment pattern is made up of RHYTHM, BASS, CHORD 1, CHORD 2 and CHORD 3 parts. You can individually switch each of these parts on and off as you wish. You can switch parts on and off while the accompaniment is being played or while it is stopped.



The following shows the keys to use to switch parts on and off.

Button Name	Part
8/RHYTHM	Rhythm
7/BASS	Bass
6/CHORD 3	Chord 3
5/CHORD 2	Chord 2
4/CHORD 1	Chord 1

Indicators to the left of each part button indicates whether that part is currently on (lit) or off (unlit).

All parts are on (all indicators are lit) whenever you use the MODE button to select FINGERED, CASIO CHORD or FREE SESSION.

About the mixer

You can individually adjust the volume balance for auto-accompaniment parts to produce exactly the mix you want. For details on how to do this, see "Using the MIXER (VOLUME/PAN/EFFECT DEPTH)" on page *E-37*.

About the Pattern Program

As explained on page *E-26*, the rhythms used by the auto-accompaniment function of this keyboard consist of the following patterns.

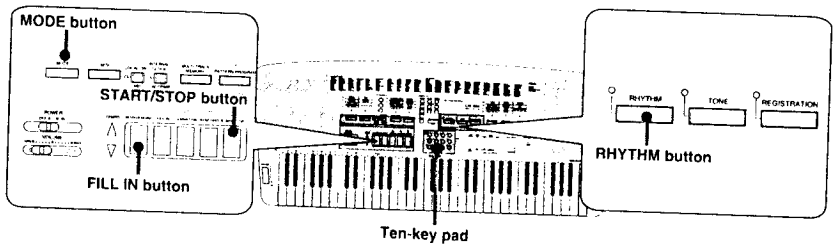
Pattern	Description
Normal	Basic 2-measure repeating pattern
Variation	Variation on 2-measure repeating pattern. Can be used in place of the Normal pattern.
Fill-in	1-measure pattern that can be used inside of repeating patterns.
Intro	Introduction pattern used at the beginning of an accompaniment.
Ending	Ending pattern used at the end of an accompaniment.

You can edit the rhythm, bass and chord parts of the Normal, Variation, and Fill-in patterns to create your own original user patterns. Up to 10 user patterns can be stored in memory and later used in exactly the same way as you use preset rhythm patterns. See "Using the Pattern Programming function" on page *E-47* for details on creating user rhythm patterns.

■ Using FREE SESSION

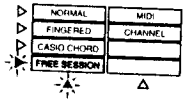
FREE SESSION is one more type of auto-accompaniment function. When you select FREE SESSION, the keyboard automatically plays back chord progressions with the accompaniment patterns. This means that you can engage in jam sessions with the keyboard as your only partner. Chord progressions have be carefully selected to provide the most representative for each of the 100 rhythm patterns.

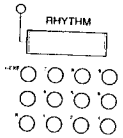
To use FREE SESSION



1. Use the MODE button to select FREE SESSION.

- At this time, the rhythm 00 DANCE POP is selected automatically.





2. Press the RHYTHM button and then use the 10-key pad to select the rhythm you want to use.
- Here, lets select 04 POPS 1.

3. Press the START/STOP button to start FREE SESSION play.

- If you select 04 POPS 1 above, the tempo is automatically set at 132. FREE SESSION always sets an appropriate tempo value for each accompaniment pattern.
- After the accompaniment pattern starts, the chords progress automatically. With rhythm 04 (selected above), the chord changes every two measures in the sequence C ➡ G ➡ F ➡ G, repeating every eight measures.

4. Play along with the auto-accompaniment on the melody keyboard.

- When you select rhythm 04 (as we did above), the melody keyboard is automatically assigned tone 06 STRINGS PIANO. With FREE SESSION, the keyboard automatically assigns the most fitting tone for the accompaniment.
- Be sure to use only the melody keyboard (page *E-21*) to play the melody.

5. Now press the FILL IN button and change the chord progression.

- When you press the FILL IN button, the accompaniment enters a fill in pattern, and the chord progression changes from the next measure. With the POPS 1 rhythm, pressing the FILL IN button changes to a two-measure Am ➡ F ➡ C ➡ G pattern, which is repeated every eight measures.
- Pressing the FILL IN button again returns the patterns to its C ➡ G ➡ F ➡ G pattern.
- Some rhythms do not change when you press the FILL IN button.

6. To stop FREE SESSION play, press the START/STOP button.

- A table of rhythms and the chord progressions is included at the back of this manual. See "FREE SESSION chord progressions" on page *A-1*.

Note

- Whenever you change the rhythm while FREE SESSION is playing, the chord progression play switches off, and the currently playing chord continues to play without change. To resume play of the chord progression, press START/STOP to stop play, and then press START/STOP again to restart using the new rhythm.

Changing the key of the FREE SESSION accompaniment

- FREE SESSION accompaniments are played in the key of C. You can change the key by pressing any of the keys on the accompaniment keyboard.
- You can also start out the accompaniment in the key you want by pressing the accompaniment keyboard key that corresponds to the key you want to use, instead of pressing the START/STOP button in Step 3 under "To use FREE SESSION" on page *E-28*.

To finish FREE SESSION play with an ending pattern

Pressing INTRO/ENDING while FREE SESSION play is in progress plays and ending pattern and then ends FREE SESSION play.

Important!

- If you plan to use an ending pattern to finish FREE SESSION play, be sure to press the INTRO/ENDING button before you start FREE SESSION play. If you start FREE SESSION play with the START/STOP button, the ending pattern produced by INTRO/ENDING may be quite different from the accompaniment pattern that is playing.

Note

- If you change the rhythm while using Free Session, the tone, tempo, and Mixer parameters automatically change to values preset for the newly selected rhythm.

<Examples>
00 DANCE POP 1 ⇨
TONE: 25 BRASS2, TEMPO: 110, MIXER: VOLUM=7/PAN=0/EFFECT DEPTH=2

65 BOSSA NOVA ⇨
TONE: 42 SYNTH-LEAD3, TEMPO: 130, MIXER: VOLUME=7/PAN=0/EFFECT DEPTH=2

Note that when you change to another mode, the settings you make here remain in effect (unless the mode you change to enforces initial default settings) until you change them.

Part 3 Advanced Operations

■ Precautions about memory back-up

This keyboard uses batteries to retain the data* described in this part of the manual. Remember however that if the batteries go dead, the data you have stored in memory will all be lost. To avoid this, keep batteries loaded in the unit and be sure to supply power through an AC adaptor whenever you replace batteries. See "About the power supply" on page *E-8* for important information the symptoms for low battery power and other power supply information.

*** Such data as:**

- Tones edited using the Tone Editor
- Set ups created using the Registration function
- Effects changed using the Effect Editor
- User rhythms created using the Pattern Program
- Songs recorded in Multi-Track Memory

■ Using the Tone Editor

The Tone Editor lets you modify the attack, release, and wave parameters of the built-in tones to create your own user tones. Up to 100 user tones can be stored in memory for instant recall when you need them.

Tone Editor Operation Outline

The following shows the general flow for Tone Editor operations.

Select the preset tone you want to edit.

↓

Use the Tone Editor Mode to edit parameters* in the following sequence:
- Attack time
- Release time
- Waveform

↓

Save the edited tone to memory

* See "About editable parameters" on page *E-35* for details on what each parameter means.

Getting ready

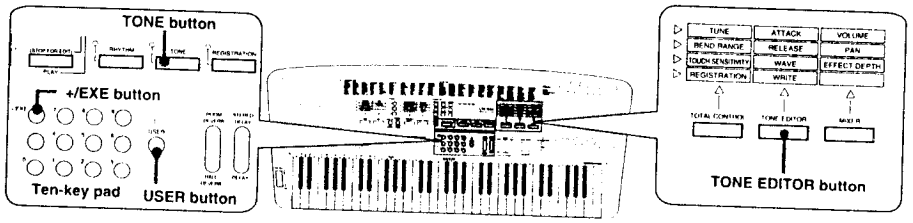
Prepare the keyboard as described below.

1. Switch power on.

2. Use the MODE button to select NORMAL.
   - You can also perform the following procedure while CASIO CHORD, FINGERED, or FREE SESSION is selected.
   - Note that you cannot perform the following procedure in the MIDI Mode, Multi-Track Memory Mode, or Pattern Program Mode.

3. Decide the memory number where you want to store your user tone after you are through with the editing procedure.
   - This is not an important concern when you are creating your first few user tones. As your collection grows however, you will have to be more careful. This is because if you save to a memory that already contains data, the previous data will be lost.

To use the Tone Editor



1. Select the built-in tone that you want to use as a base.

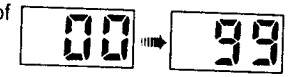
TONE

1-1 Press the TONE button.

USER

1-2 If you want to use a previously created user tone as the base, press the USER button.

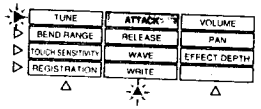
1-3 Use the 10-key pad to input the number of the tone you want to use.



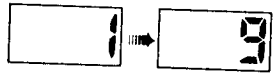
2. Adjust the attack time.

TONE EDITOR

2-1 Use the TONE EDITOR button to select ATTACK.



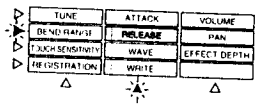
2-2 Input a value on the 10-key pad to adjust the attack time. 1 is the shortest attack time and 9 is the longest. Try a number of settings while playing notes on the keyboard until you find the one you want.



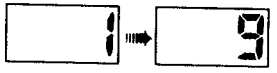
3. Adjust the release time.

TONE EDITOR

3-1 Use the TONE EDITOR button to select RELEASE.



3-2 Input a value on the 10-key pad to adjust the release time. 1 is the shortest release time and 9 is the longest. Try a number of settings while playing notes on the keyboard until you find the one you want.



4. Adjust the waveform.

TONE EDITOR

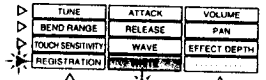
4-1 Use the TONE EDITOR button to select WAVE.

4-2 Input a value on the 10-key pad to adjust the waveform. Each of the values from 0 through 9 represents a different waveform. Try a number of settings while playing notes on the keyboard until you find the one you want.

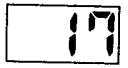
5. Store the edited tone into memory.

TONE EDITOR

5-1 Use the TONE EDITOR button to select WRITE.



5-2 Use the 10-key pad to specify the memory number where you want to store the tone. To store the tone in memory number 17 for example, input 1 and then 7.



Important!

- If there is data already stored under the memory number you select, the following operation will delete the previous data and replace it with the new data.

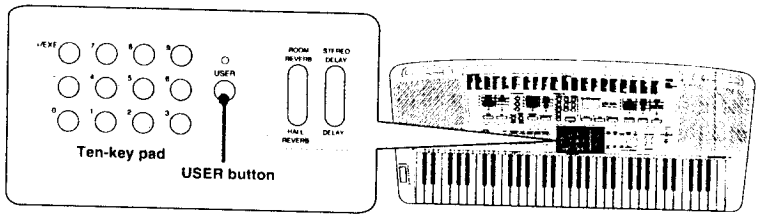
+/EXE

TONE EDITOR

5-3 Press the +/EXE button to store the tone into memory or MODE to abort the memory storage operation and exit the tone editor. If you want to abort the save operation and return to editing the same tone, press TONE EDITOR and continue from Step2 on page *E-31*.

- After the tone is stored, the TONE EDITOR indicator goes out, and the USER indicator lights.
- The user tone is stored under the memory number you specified, and that tone is selected for play on the keyboard.
- Since you can store up to 100 tones, it is a good idea to keep a written record of what you have stored under each memory number. You can find a User Tone Chart for your record keeping on page *A-4* of this manual.

To recall a user tone



1. With power switched on, press the USER button. The USER indicator lights.

2. Use the 10-key pad to input the number of the user tone you want to recall.

- To recall the tone stored in memory number 17 for example, input 1 and then 7.

About editable parameters

The following describes the characteristics of each of the three editable parameters: attack time, release time and waveform.

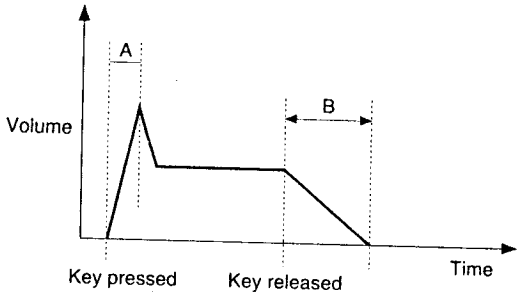
ATTACK — Attack Time

Attack time is the amount of time it takes for a tone to reach its maximum volume level after you press a key. A short attack time produces a hard sound, like a piano or vibraphone. A longer attack time produces a soft sound, like a cello.

RELEASE — Release Time

Release time is the amount of time it takes for a tone to stop sounding when you release a key. You can think of it as controlling how long a note lingers. If you want an organ-like tone that should cut off as soon as the keys are released, set this value to zero.

The following illustration shows the relationship between attack and release times.



This graph shows changes in volume from the point when a key is depressed up to the point that the key is released. The time it takes from pressing the key until the tone reaches its maximum volume (indicated as A in the graph) is the attack time. The time it takes for the volume to drop to zero once the key is released (indicated as B) is the release time.

WAVE — Waveform

The waveform is probably the most basic parameter that determines what a tone sounds like. The only way to find which of the nine different waveforms you want to use is to try them one-by-one.

Note that the initial waveform setting for all tones is zero, and you can select others within the range of 1 through 9.

■ Using the Effect Editor

The Effect Editor gives you control over the parameters of the eight digital effect. In addition, you can also use the MIXER to control the intensity (depth) of the effects.

Effect Editor Operation Outline (Quick Editor).

The following shows the general flow for Effect Editor operations.

Select the preset effect you want to edit.

↓

Use the Quick Editor to edit parameters* in the following sequence:
- Parameter 1
- Parameter 2

* See "About editable parameters" on page *E-35* for details on what each parameter means.

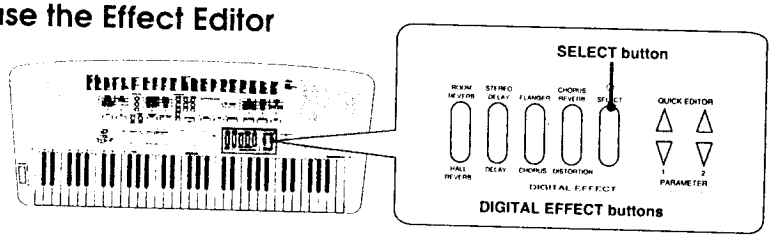
Getting ready

Prepare the keyboard as described nelow

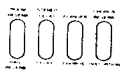
1. Switch power on.

2. Use the MODE button to select NORMAL.
   - You can also perform the following procedure in any mode except the Pattern Program mode.

To use the Effect Editor



1. Select the built-in effect that you want to use as a base.



1-1 Press one of the DIGITAL EFFECT buttons.

1-2 If you want to select an effect whose name is marked above a button, first light the SELECT indicator by pressing SELECT. To select an effect below a button, press SELECT to turn the indicator off.

2. Adjust PARAMETER 1.

△
▽

- Use the two PARAMETER 1 buttons to make the adjustments. Each press of a button changes the setting to one of eight levels. Play notes on the keyboard as you make changes until you find the effect you want.

3. Adjust PARAMETER 2.

△
▽

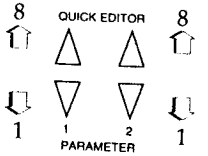
- Use the two PARAMETER 2 buttons to make the adjustments. Each press of a button changes the setting to one of eight levels. Play notes on the keyboard as you make changes until you find the effect you want.

Notes

- The changes that you make in Steps 2 and 3 in the above procedure are retained as long as power is supplied to the keyboard (even if you switch the keyboard off), or until you initialize the keyboard.
- The details of the PARAMETER 1 and PARAMETER 2 settings are described below.

About editable parameters

The effect parameters that are available for editing with the Quick Editor and the editing ranges are different for each digital effect. You can set each parameter within a range of 1 through 8.



HALL REVERB

- Parameter 1 — Initial reverb time
  Use these keys to change the time it takes to reach the initial reverb sound. Pressing ▲ creates the impression of a larger hall, while ▼ creates the impression of a smaller hall.

- Parameter 2 — Reverb time
  Use these keys to adjust how long the reverb effect is applied. Pressing ▲ increases the time, and ▼ decreases it.

DELAY

- Parameter 1 — Feedback
  Use these keys to change how long the delay continues. Pressing ▲ increases the delay, and ▼ decreases it.

- Parameter 2 — Delay time
  Use these keys to change the time lag between the original sound and the delayed (echoed) sound. Pressing ▲ increases the lag, and ▼ decreases it.

CHORUS

- Parameter 1 — Modulation volume
  Use these keys to adjust the volume of the delay tone. Pressing ▲ increases the volume, and ▼ decreases it.

- Parameter 2 — Modulation speed
  Use these keys to adjust the modulation speed. Pressing ▲ increases the speed, and ▼ decreases it.

DISTORTION

- Parameter 1 — Feedback
  Use these keys to change the delay feedback volume applied to the tone being distorted. Pressing ▲ increases the volume, and ▼ decreases it.

- Parameter 2
  Parameter value 1 to 5
  In the range of 1 to 5, the effect mixes distortion and delay. The actual value represent the time lag between the original tone and the delayed (echoed) tone for the mixed delay effect. Raising the value by pressing ▲ increases the lag, and ▼ decreases it.

  Parameter value 6 to 8
  In the range of 6 to 8, this effect mixes distortion and flanger. The actual value represent the flanger modulation depth. Raising the value by pressing ▲ increases the depth, and ▼ decreases it.

ROOM REVERB

- Parameter 1
  Parameter value 1 to 5
  In the range of 1 to 5, you can control the time it takes to reach the initial reverb sound. Pressing ▲ creates the impression of a larger room, while ▼ decreases the size of the room.
  Parameter value 6 to 8
  In the range of 6 to 8, you can control the gate time for gate reverb.

- Parameter 2 — Reverb time
  Use these keys to adjust how long the reverb effect is applied. Pressing ▲ increases the time, and ▼ decreases it.

STEREO DELAY

- Parameter 1 — Feedback
  Use these keys to change how long the delay continues. Pressing ▲ increases the delay, and ▼ decreases it.

- Parameter 2
  This parameter controls the stereo position.

FLANGER

- Parameter 1 — Feedback
  Use these keys to change the amount of flanger effect applied. Pressing ▲ increases the amount, and ▼ decreases it.

- Parameter 2 — Modulation depth
  Use these keys to adjust the amplitude at generation of the delay tone. Pressing ▲ increases the amplitude, and ▼ decreases it.

CHORUS REVERB

- Parameter 1 — Chorus depth
  Use these keys to adjust the depth of the chorus. Pressing ▲ increases the depth, and ▼ decreases it.

- Parameter 2 — Reverb time
  Use these keys to adjust how long the reverb time is applied. Pressing ▲ increases the time, and ▼ decreases it.

■ Using the MIXER (VOLUME/PAN/EFFECT DEPTH)

When you are using auto-accompaniment, the music you play is actually made up of six individual parts: your melody, plus five auto-accompaniment parts (RHYTHM, BASS, CHORD 1, CHORD 2, CHORD 3). The MIXER makes it possible for you to control the volume, panning (stereo position), and the intensity of each effect (effect depth). This means you get extensive control over the acoustic parameters of each element that makes up your music.
The MIXER can be used in the Normal Mode, Auto-Accompaniment Mode, Pattern Program Mode, Multi-Track Memory Mode, and the MIDI Mode. This section describes operation in the Normal and Auto-Accompaniment modes only. Use in the other modes can be found in the sections of this manual that cover those modes.

MIXER Operation in the Normal Mode

In the Normal Mode, you can adjust the volume balance of the melody and rhythm parts, the stereo position of the melody part, and effect intensity of the melody part. The following shows the general flow for Mixer operations in the Normal Mode.

Select the Normal Mode.

↓

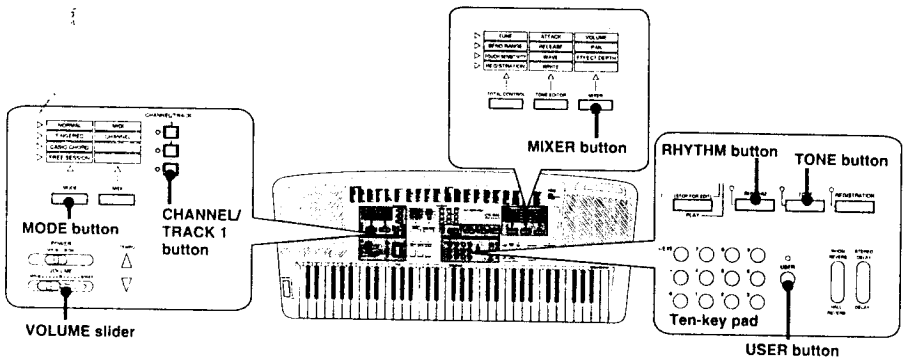
Enter the Mixer Mode and perform settings in the following sequence:
- Melody part volume (VOLUME)
- Rhythm part volume (VOLUME)
- Melody part stereo position (PAN)
- Melody part effect intensity (EFFECT DEPTH)

↓

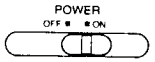
Return to Normal Mode

Important!
Pressing the MIXER button will interrupt an auto-rhythm if it is running, so use some caution when attempting to mix parts while playing.

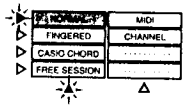
To use the MIXER in the Normal Mode



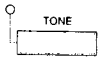
1. Switch power on.



2. Use the MODE button to select NORMAL.



3. Select the built-in tone that you want to use.



3-1 Press the TONE button.

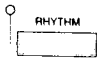
3-2 If you want to use a previously created user tone, press the USER button.

3-3 Use the 10-key pad to input the number of the tone you want to use.

Important!

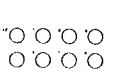
- You cannot adjust the stereo position (PAN) or effect intensity (EFFECT DEPTH) for tone 50 PERCUSSION.

4. Select the built-in rhythm that you want to use.



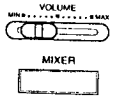
4-1 Press the RHYTHM button.

4-2 If you want to use a previously created user rhythm (see "Using the Pattern Programming function" on page *E-47*), press the USER button.



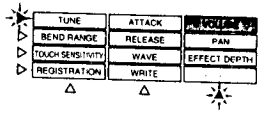
4-3 Use the 10-key pad to input the number of the rhythm you want to use.

5. Adjust the volume balance of the melody part and the RHYTHM part.

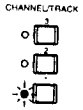


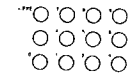
5-1 First adjust the volume of the melody part.

- Press the MIXER button to select VOLUME.

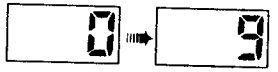


- At this time, the CHANNEL/TRACK 1 indicator also lights.





5-2 Use the 10-key pad to adjust the volume. Inputting 9 sets the maximum volume, and 0 sets the volume at zero.

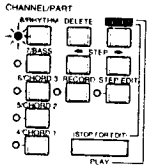


Helpful tip ...

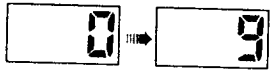
Pressing the START/STOP button here starts play of the rhythm. You can play some keyboard notes and listen to the rhythm as you perform the above step, and see what the balance sounds like.

5-3 Next, adjust the volume of the RHYTHM part.

- Press the 8/RHYTHM button. The CHANNEL/TRACK 1 indicator goes out and the 8/RHYTHM indicator lights.

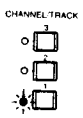


5-4 Use the 10-key pad to adjust the volume of the RHYTHM part. Inputting 9 sets the maximum volume, and 0 sets the volume at zero.



5-5 After you finish setting the volume of the RHYTHM part, press the CHANNEL/TRACK 1 button.

- The 8/RHYTHM indicator goes out and the CHANNEL/TRACK 1 indicator lights again.

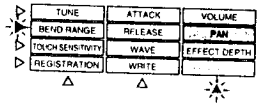


5-6 Repeat Step5-2 through Step5-5 as many times as you want until you achieve the desired balance. Always make sure that you take the procedure up to Step5-5 before attempting to proceed with Step6.

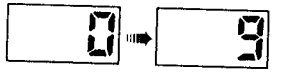
6. Set the stereo position (pan) of the melody part.

6-1 Press the MIXER button to select PAN.

- The display shows 0, which indicates the default pan setting.



6-2 Use the 10-key pad to set the stereo position (pan) within the range of 0 to 9, as described below.

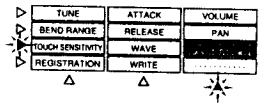


Setting	Meaning
0	Initial default. For most preset tones, the stereo position is center
1	Far Left
2	Left
3	Center
4	Right
5	Far Right
6	Moving: Left ⇄ Right with each press of keyboard
7	Moving: ➡Center ➡ Far Left ➡ Far Right ➡
8	Moving: ➡Far Left ➡ Left ➡ Right ➡ Far Right ➡
9	Moving: ➡Far Right ➡ Right ➡ Left ➡ Far Left ➡

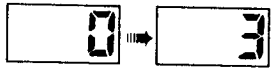
7. Adjust the intensity of the effect (effect depth) for the melody part.

MIXER

7-1 Press the MIXER button to select EFFECT DEPTH.
- The display shows 2, which is the default effect depth value.



7-2 Use the 10-key pad to set the effect depth within the range of 0 (none) to 3 (maximum).

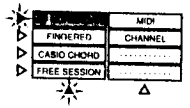


Important!
- Values in the range of 4 through 9 are ignored by the keyboard.

8. Exit the Mixer Mode.

MODE

8-1 Press the MODE button to exit the MIXER mode and back in the Normal Mode.



MIXER

8-2 If you want to perform some more Mixer settings here, press the MIXER button again and continue from Step5.

Important!
- The above Mixer settings return to their defaults whenever you change to another tone, rhythm or mode, or when you switch power off. If you want to save your settings, you should use the Registration procedure described on page *E-45*.

MIXER Operation in the Auto-Accompaniment Mode

In the Auto-Accompaniment Mode, you can adjust auto-accompaniment parts (RHYTHM, BASS, CHORD 1, CHORD 2, CHORD 3) and the melody played on the keyboard within the ranges noted below.

Part	VOLUME	PAN	EFFECT DEPTH
Rhythm	0 to 9	Fixed	Fixed
Bass	0 to 9	Fixed	Fixed
Chord 1	0 to 9	Fixed	Fixed
Chord 2	0 to 9	Fixed	Fixed
Chord 3	0 to 9	Fixed	Fixed
Melody	0 to 9	0 to 9	0 to 3

The following shows the general flow for Mixer operations in the Auto Accompaniment Mode.

Select an Auto Accompaniment Mode*.

↓

Enter the Mixer Mode and perform settings in the following sequence:
- Volume adjustment for each part (VOLUME)
- Melody part stereo position (PAN)
- Melody part effect intensity (EFFECT DEPTH)

↓

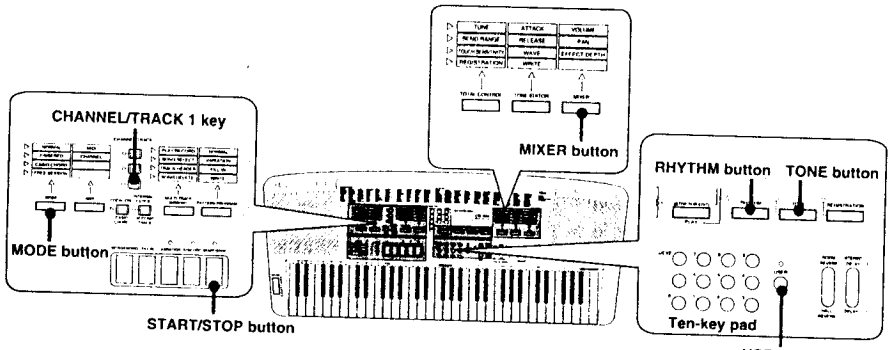
Return to Auto Accompaniment Mode

* You can use FINGERED or CASIO CHORD.

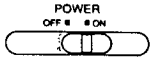
Important!

Pressing the MIXER button will interrupt an auto-rhythm if it is running, so use some caution when attempting to mix parts while playing.

To use the MIXER in the Auto Accompaniment Mode

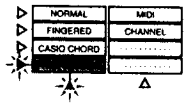


1. Switch power on.



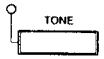
2. Use the MODE button to select one of the auto-accompaniment modes.

2-1 Use the MODE button to select either FINGERED or CASIO CHORD.



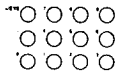
2-2 Use the part buttons to switch on any parts that might be switched off.

3. Select the built-in tone that you want to use.

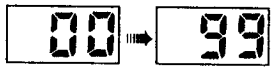


3-1 Press the TONE button.

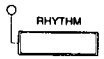
3-2 If you want to use a previously created user tone, press the USER button.



3-3 Use the 10-key pad to input the number of the tone you want to use.

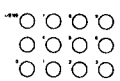


4. Select the built-in rhythm that you want to use.



4-1 Press the RHYTHM button.

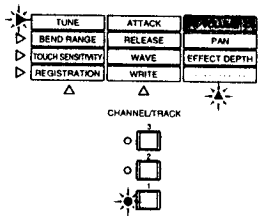
4-2 If you want to use a previously created user rhythm (page *E-47*), press the USER button.



4-3 Use the 10-key pad to input the number of the rhythm you want to use.

5. Adjust the volume balance of each part.

5-1 Press the MIXER button to select VOLUME.

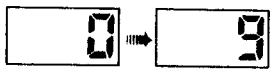


- At this time, the CHANNEL/TRACK 1 indicator also lights, so you are ready to adjust the volume of the melody part first.

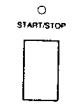
5-2 Play a chord on the accompaniment keyboard to start play of the accompaniment pattern.

5-3 Use the 10-key pad to adjust the volume balance of each part.

- Press one of the buttons shown below to select each part and set its volume.



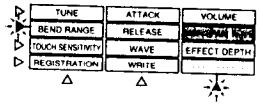
Part	Button
Melody	CHANNEL TRACK 1
Rhythm	8/RHYTHM
Bass	7/BASS
Chord 1	4/CHORD 1
Chord 2	5/CHORD 2
Chord 3	6/CHORD 3



5-4 After you finish adjusting the volume balance for each part, press the START/STOP button to stop auto-accompaniment play.

6. Set the stereo position (pan) of the melody part.

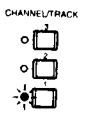
6-1 Press the MIXER button to select PAN.

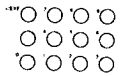


Important!

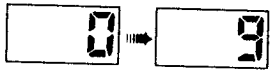
- When the RHYTHM part is selected (indicated when the 8/RHYTHM indicator is lit), pressing the MIXER button will not select the PAN setting. To select the PAN setting, you must select any part except the RHYTHM part.

6-2 If the CHANNEL/TRACK 1 indicator is not lit, press the CHANNEL/TRACK 1 key to light it.





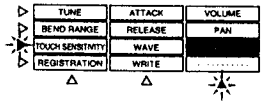
6-3 Use the 10-key pad to set the stereo position (pan) within the range of 0 to 9, as described below.



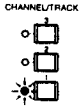
Setting	Meaning
0	Initial default. For most preset tones, the stereo position is center
1	Far Left
2	Left
3	Center
4	Right
5	Far Right
6	Moving: Left ⇄ Right with each press of keyboard
7	Moving: ➡Center ➡ Far Left ➡ Far Right ➡
8	Moving: ➡Far Left ➡ Left ➡ Right ➡ Far Right ➡
9	Moving: ➡Far Right ➡ Right ➡ Left ➡ Far Left ➡

7. Adjust the intensity of the effect (effect depth) for the melody part.

7-1 Press the MIXER button to select EFFECT DEPTH.



7-2 If the CHANNEL/TRACK 1 indicator is not lit, press the CHANNEL/TRACK 1 key to light it.



7-3 Use the 10-key pad to set the effect depth within the range of 0 (none) to 3 (maximum).

Important!
- Values in the range of 4 through 9 are ignored by the keyboard.

8. Exit the Mixer Mode.

8-1 Press the MODE button to exit the MIXER mode and back in the Auto-Accompaniment Mode.

8-2 If you want to perform some more Mixer settings here, press the MIXER button again and continue from Step5.

Important!
- The above Mixer settings return to their defaults whenever you change to another tone, rhythm or mode, or when you switch power off.

■ Using the Registration function

With the Registration function, you can save setups such as tone and rhythms selections, tempo settings, and effect selections for instant recall when you need them.

Registration Function Operation Outline

The following shows the general flow for Registration function operations.

Make the following settings and selections:
- Tone number
- Rhythm number
- Tempo
- Touch Response on/off
- Effect selection
- Touch sensitivity
- Bend range
- Mixer settings (VOLUME, PAN, EFFECT DEPTH) for the melody part

↓

Save the setup to memory (up to 10)

Getting ready

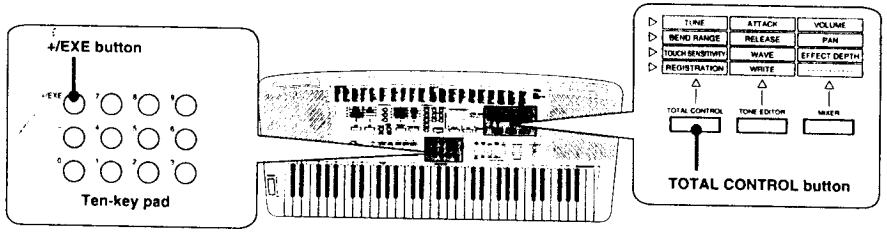
Prepare the keyboard as described below.

1. Switch power on.

2. Use the MODE button to select NORMAL.
   - You can also perform the following procedure while CASIO CHORD, FINGERED, or FREE SESSION is selected.
   - Note that you cannot perform the following procedure in the MIDI Mode, Multi-Track Memory Mode, or Pattern Program Mode.

3. Decide the memory number where you want to store your set up after you are through with the editing procedure.
   - This is not an important concern when you are creating your first few registration setups. As you collection grows however, you will have to be more careful. This is because if you save to a memory that already contains data, the previous data will be lost.

To use the Registration function

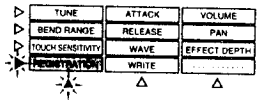


1. Make the settings that you want to store.
   1-1 Select a tone (page *E-12*).
   1-2 Select a rhythm (page *E-18*).
   1-3 Set the tempo (page *E-19*).
   1-4 Switch Touch Response on or off (page *E-14*).
   1-5 Select an effect (page *E-16*).
   1-6 Set the Touch Sensitivity (page *E-90*).
   1-7 Set the bend range (page *E-89*).
   1-8 Make Mixer settings (page *E-37*)*.
   *Note that only the Mixer settings for the melody part can be registered.

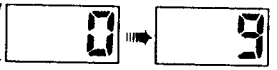
2. Use the Registration function to store the setup.

TOTAL CONTROL

2-1 Press the TOTAL CONTROL button four times to activate the Registration function.



2-2 Use the 10-key pad to specify the memory number where you want to store the tone.
- The currently selected Registration memory number is shown on the display.



Important!
- If there is data already stored under the memory number you select, the following operation will delete the previous data and replace it with the new data.

2-3 Press the +/EXE button to store the tone into memory or MODE to abort the memory storage operation and exit the registration.

Note
- Since you can register up to 10 setups, it is a good idea to keep a written record of what you have stored under each memory number. You can find a Registration Setup Chart for your record keeping on page *A-5* of this manual.

Recalling Registration setups

Use the following procedure to recall setups you have stored in memory.

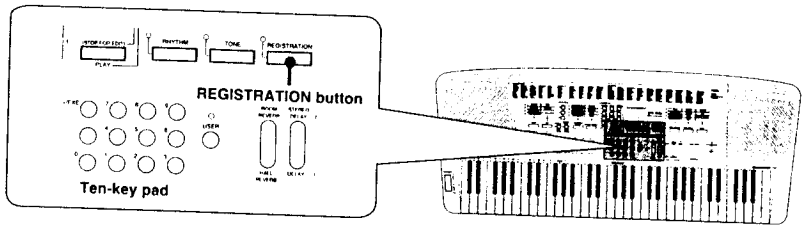
Getting ready

Prepare the keyboard as described below.

1. Switch power on.

2. Use the MODE button to select NORMAL.
   - You can also perform the following procedure while CASIO CHORD, FINGERED, or FREE SESSION is selected.

To recall Registration setups



1. Press the REGISTRATION button.
   REGISTRATION
   - The REGISTRATION indicator starts to flash.

2. Use the 10-key pad to input the number of the registration memory whose contents you want to recall.
   - To recall the contents of memory 5 for example, press 5.
   - At this time the REGISTRATION indicator stops flashing.

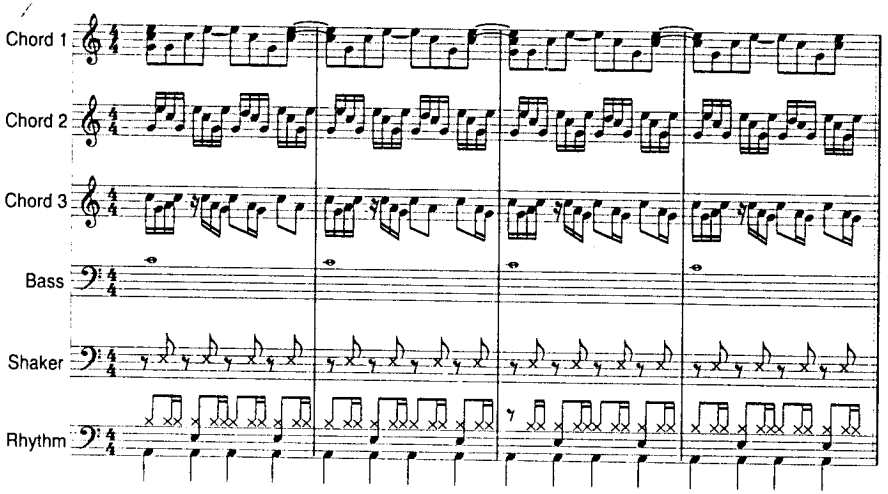
■ Using the Pattern Programming function

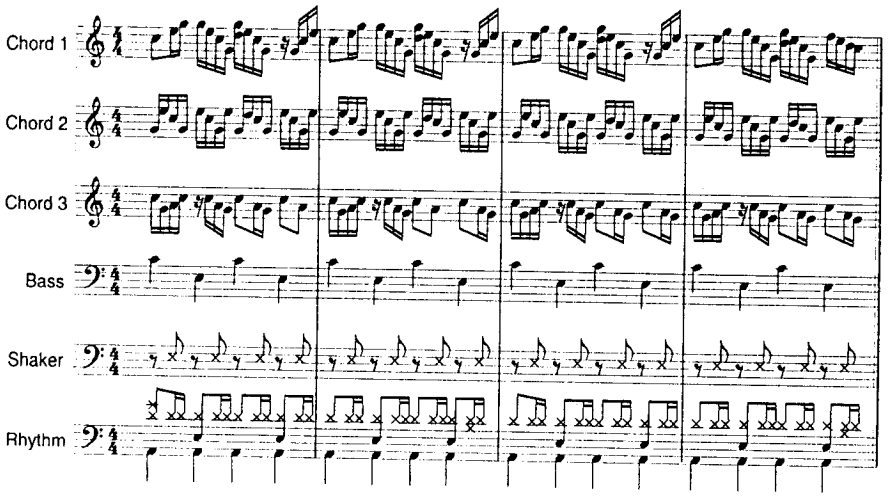
The Pattern Programming function of this keyboard lets you select any of the 100 built-in auto-accompaniment patterns and edit their parts to create your own original user patterns. You can store up to 10 user patterns in memory, and recall them just as you do the preset patterns.

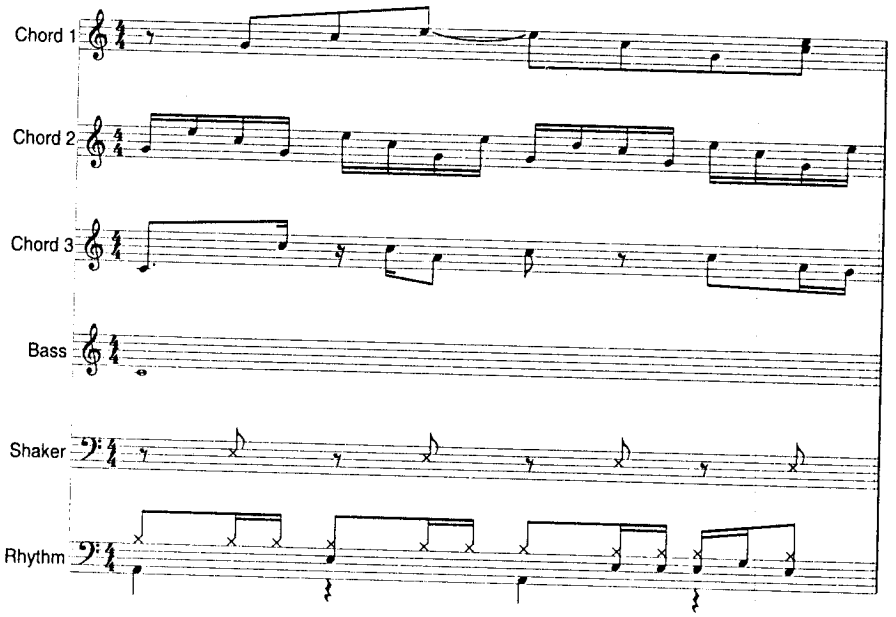
Types of editable patterns

Each preset auto-accompaniment pattern actually consists of 5 types. First there are the three patterns, referred to as: the normal pattern, the variation pattern, and the fill-in pattern. In addition, there are an intro pattern and an ending pattern.
The following scores show the three pattern types for auto-accompaniment pattern 10 FOLKIE POP 1.

• Normal Pattern

This repeating pattern plays when the VARIATION indicator is off. The following score shows the pattern that is played when the key for C major is pressed on the accompaniment keyboard.

• Variation Pattern

This repeating pattern plays when the VARIATION indicator is on. The following score shows the pattern that is played when the key for C major is pressed on the accompaniment keyboard.

• Fill-In Pattern

This 1-measure pattern plays when the FILL-IN button is pressed. The following score shows the pattern that is played for C major.

With Pattern Programming you are able to edit all five parts in each of the repeating auto-accompaniment patterns.

Pattern Programming Outline

The following shows the general flow for pattern programming.

Select the preset accompaniment pattern (rhythm) you want to use as a base.

Enter the Pattern Programmer Mode.

Individually program each part of the normal pattern.
- Rhythm part
- Bass part
- Chord 1 through Chord 3 parts
- Mixer programming.

Individually program each part of the variation pattern.
- Rhythm part
- Bass part
- Chord 1 through Chord 3 parts
- Mixer programming.

Individually program each part of the fill-in pattern.
- Rhythm part
- Bass part
- Chord 1 through Chord 3 parts
- Mixer programming

Store the edited accompaniment pattern into a user rhythm area.

You should perform all of the steps shown above if you want to program all three patterns (normal, variation, fill-in). If you want to program only the fill-in pattern and leave the normal and variation patterns as they are, for example, simply skip the normal and variation programming parts and start with fill-in pattern programming.

Note that you cannot create your own original pattern for the intro and ending patterns. These two patterns remain that same as they are for the accompaniment pattern you use as a base.

The following procedure describes the steps you should follow to program all three patterns (normal, variation, fill-in). When you perform your actual programming, you can also leave any of the patterns as it is by simply skipping the applicable steps in the following procedure.

Getting ready

Prepare the keyboard as described below.

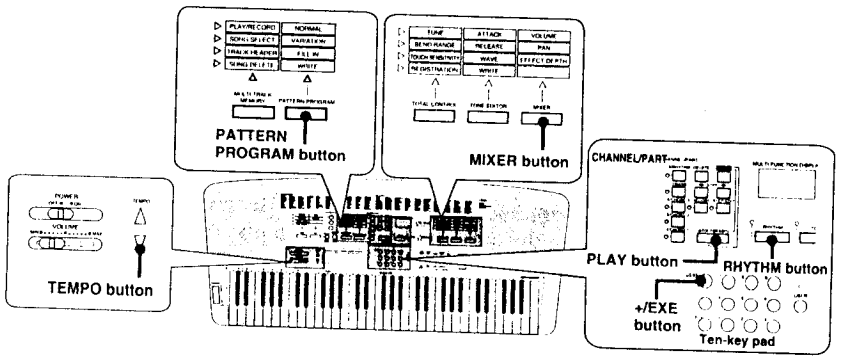
1. Switch power on*.
   * It should be noted that editing accompaniment patterns often takes considerable time. Because of this, we recommend that you cancel the Auto Power Off function when performing this operation (see page *E-8*). Otherwise, you may lose some of your work should the Auto Power Off function operated while you are editing.

2. Use the MODE button to select and mode except FREE SESSION.

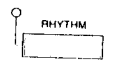
3. Decide the memory number where you want to store your user rhythm after you are through with the editing procedure.
   - This is not an important concern when you are creating your first few user rhythms. As you collection grows however, you will have to be more careful. This is because if you save to a memory that already contains data, the previous data will be lost.

Important!
- You may experience problems with notes running together when recording each part. This is especially true with series of very short notes (especially 16th notes). In such a case, use a slower tempo and play each note distinctly (staccato-like).
- You cannot input series of 16th notes in the Chord 3 part. If you want to use a series of 16th notes, input them in the Chord 1 or Chord 2 part.

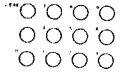
To use pattern programming



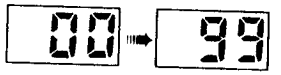
1. Select the rhythm you want to use as a base.



1-1 Press the RHYTHM button.



1-2 Use the 10-key pad to input the number of the rhythm you want to use.



Helpful tips ...

- After you decide the rhythm you want to use as the base, play the normal, variation, and fill-in accompaniment patterns in C major. While the patterns are playing decide which ones you want to change and how you want them to sound after you make change them. Of course, you can also decide to create a completely different pattern. Remember that you can switch each part on and off (page *E-26*), so you can listen to each one and plan the changes you want to make.
- Note that the tone used for the bass and chords is predetermined according to the rhythm being used. Bass and chord tones can, however, be changed to preset or user tones when you program these parts. It is best to listen to each part of the base rhythm first and decide what changes you want to make doing anything else. This is because you won't be able to hear the tone you change to during the actual pattern programming procedure.

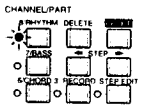
Important!

- Note that you cannot use a previously created user rhythm as a base for pattern programming. If you select a user rhythm to use as a base, there is the chance that it will not be recorded properly. Be sure to use preset rhythms only.

2. Press the PATTERN PROGRAM button to enter the Pattern Programming Mode.

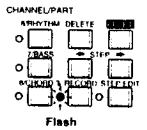
3. Record the Rhythm part.

3-1 Press the 8/RHYTHM button to select the Rhythm part. The 8/RHYTHM indicator is lit.



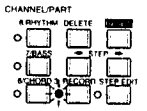
3-2 Press the RECORD button.

- The RECORD indicator starts to flash, which indicates that the keyboard is standing by to record a pattern.



3-3 Press the PLAY button.

- The RECORD indicator stops flashing (and remains lit), and the remaining four parts (excluding the RHYTHM part) start to play repeatedly.
- At this point, the RHYTHM part is completely empty, so you can use the following steps to input a completely new RHYTHM part.



3-4 Use the TEMPO button to adjust the tempo to the level you want.

- You can change the record tempo at any point throughout the following procedure.

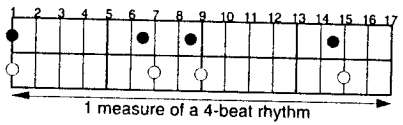
3-5 Play the RHYTHM part you want on the keyboard.

* The entire keyboard is set up to play percussion sounds as illustrated above the keyboard keys.

- When you play the keyboard, the corresponding percussion sound plays in a repeating 2-measure pattern. You should watch the two indicators above the SYNCHRO and the START/STOP buttons in order to time your play. The operation of these indicators are identical to their operation when auto rhythm and Auto Accompaniment patterns are playing. Both the red and green indicators light for the first beat of the first measure (see "About the rhythm indicators" on page *E-20*).

About the Auto-Correction...

As explained above, you can input notes during pattern programming in accordance with the beats shown by the indicators above the SYNCHRO and START/STOP buttons. Note that this keyboard also performs Auto-Correction which adjusts your input as illustrated below.



The vertical lines (which illustrated beats and sub-beats) in the illustration shows how the keyboard partitions the pattern program. The black circles indicate the timing of user inputs on the keyboard, and the white circles indicate the result after the keybaord performs Auto-Correction.

Most rhythms use 16 partitions as illustrated above, but other rhythm patterns use 9 partitions (rhythm numbers 46, 56, 90) or 12 partitions (rhythm numbers 13, 26, 27, 40, 41, 42, 43, 44, 45, 47, 48, 55, 57, 82, 92, 95, 96). No matter how many partitions there are for a rythm, Auto-Correction effectively repositiins all inputs so they align with the vertical lines (beats and sub-beats).

- If you make mistakes during your input, you can delete the sections you don't need. Hold down the DELETE button and press the keyboard key that corresponds to the sound that you want to delete from the pattern. The percussion sound will be deleted from the pattern for as long as you hold the DELETE button and the keyboard key down.
- To accent a previously input percussion sound, press the +/EXE button when the part you want to accent plays.
- To remove an accent that you have assigned to a percussion note, press the – button when the accented note plays.

3-6 After you finish inputting the RHYTHM part, press the PLAY button to complete the input procedure.

Important!

Be sure not to press the PLAY button here. If you do, the rhythm part you just recorded will be deleted. Pressing the PLAY button takes you back to step 3-3, which means that you must re-record the rhythm part.

- Pattern playback stops, and the keyboard re-enters standby for pattern recording, which is indicated by a flashing RECORD indicator.

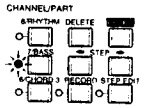
Important!

Note the following important information before proceeding with pattern programming.

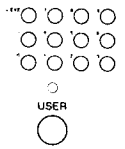
- You can input the bass and chord parts (1 through 3) in the key of C major only. After you complete the pattern programming procedure and store your rhythm patterns into memory, you can play them back in the key you want by pressing the corresponding accompaniment keyboard key.

4. Record the BASS part.

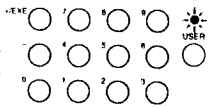
4-1 Press the 7/BASS button to select the Bass part. The 7/BASS indicator is lit.



- At this time the display shows a number that indicates the tone preset for the bass part.
- Tones 80 through 89 are split tones, which means that the left half of the keyboard (from B_3 left) is assigned a bass tone, while the right half (from C_4 right) is assigned another tone. If you are using one of these tones, be sure to use the left half of the keyboard for input.



4-2 If you want to change the bass tone, use the 10-key pad to specify the number of the tone you want to use.

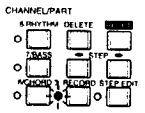


- If you want to use a user tone as the bass tone, press the USER button so that the USER indicator is lit.

Note

- Nothing sounds if you play the keyboard at this point.

4-3 Press the PLAY button.



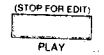
- The RECORD indicator stops flashing (and remains lit), and the remaining four parts (excluding the BASS part) start to play. The RHYTHM part played is the one you input above.
- At this point, the BASS part is completely empty, so you can use the following steps to input a completely new BASS part.

4-4 Play the BASS part you want on the keyboard.

- Play the bass part phrase in the key of C major. After you finish pattern programming, you can play it using auto-accompaniment. When you do, pressing a key on the accompaniment keyboard produces the corresponding chord.*

* You can specify the key and the chord on the accompaniment keyboard. The recorded bass part plays back in accordance with the key and chord you specify. If you input C-D-E-G for the bass part, for example, the bass part is transposed to G-A-B-D if you specify G major on the accompaniment keyboard. If you play G dim on the accompaniment keyboard, the third and fifth notes are dropped a half-note to produce G-A-$B^{\flat}$-$D^{\flat}$. All of this means that the input bass pattern is transposed in accordance to the key you specify on the accompaniment keyboard, and the third and fifth notes are adjusted in accordance with the chord.

- When you play the keyboard, the corresponding bass sound plays in a repeating 2-measure pattern. You should watch the two indicators above the SYNCHRO and the START/STOP buttons in order to time your play.
- The bass sound is monophonic. If you run notes together, they may not play back correctly. Be sure to play notes individually (staccato-like).
- If you have a problem playing a note at a particular location when recording the bass part, it probably means that the preceding note is too long. In this case, delete the note that precedes the one that won't play and try inputting it again. For details on how to delete notes, see the following section.
- If you make mistakes during your input, you can delete the sections you don't need. Press the DELETE button when it comes time for the note you want to delete to be played. If you hold down the DELETE button during the play of an entire 2-measure phrase, the entire BASS part is deleted.
- To accent a previously input bass note, press the +/EXE button when the note you want to accent plays.
- To remove an accent that you have assigned to a percussion note, press the – button when the accented note plays.



4-5 After you finish inputting the BASS part, press the PLAY button to complete the input procedure.

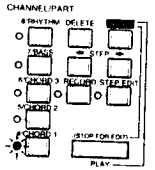
Important!

Be sure not to press the PLAY button here. If you do, the bass part you just recorded will be deleted. Pressing the PLAY button takes you back to step 4-3, which means that you must re-record the bass part.

- Pattern playback stops, and the keyboard re-enters standby for pattern recording, which is indicated by a flashing RECORD indicator.

5. Record the Chord 1 part.

5-1 Press the 4/CHORD1 button to select the Chord 1 part. The 4/CHORD1 indicator is lit.



- At this time the display shows a number that indicates the tone preset for the bass part.

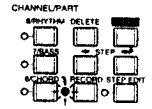
5-2 If you want to change the chord tone, use the 10-key pad to specify the number of the tone you want to use.

- If you want to use a user tone as the chord tone, press the USER button so that the USER indicator is lit.
- If you select on the split tones from 80 through 89, the tone assigned to the right side of the keyboard is assigned for chords. Selecting tone 86 (BASS/STRINGS), for example, selects the STRINGS tone for chords.

Note

- Nothing sounds if you play the keyboard at this point.

5-3 Press the PLAY button.



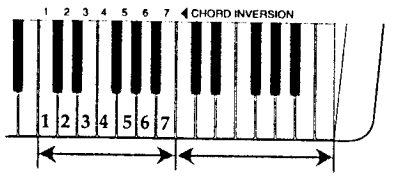
- The RECORD indicator stops flashing (and remains lit), and the remaining four parts (excluding the Chord 1 part) start to play. The RHYTHM and BASS parts played are the ones you input above.
- At this point, the CHORD 1 part is completely empty, so you can use the following steps to input a completely new CHORD 1 part.

5-4 Play the CHORD 1 part you want on the keyboard.

- Play the chord part phrase in the key of C major. After you finish pattern programming, you can play it using auto-accompaniment. When you do, pressing a key on the accompaniment keyboard produces the corresponding chord.*

* You can specify the key and the chord on the accompaniment keyboard. The recorded chord part plays back in accordance with the key and chord you specify. If you input C-E-G for the chord part, for example, the bass part is transposed to G-B-D if you specify G major on the accompaniment keyboard. If you play G dim on the accompaniment keyboard, the third and fifth notes are dropped a half-note to produce G-B♭-D♭. All of this means that the input chord pattern is transposed in accordance to the key you specify on the accompaniment keyboard, and the third and fifth notes are adjusted in accordance with the chord.

- The keyboard is set up to play chords and obbligato tone as noted in the illustration below.



Chord keyboard obbligato keyboard

You can use the keyboard to input 3-note chords, using the chord keyboard keys noted below.

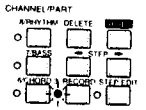
Key number	1	2	3	4	5	6	7
Chord played	G4 E4 C4	G4 D4 C4	G4 F4 C4	A4 E4 C4	C4 G4 D4	D5 A4 E4	E5 C5 G4

Use the obbligato keyboard to input single notes.

- When you play the keyboard, the corresponding chord or obbligato plays in a repeating 2-measure pattern. You should watch the two indicators above the SYNCHRO and the START/STOP buttons in order to time your play.
- Do not play notes on the two keyboards illustrated above at the same time (do not play chords and obbligato simultaneously).
- If you have a problem playing a note at a particular location when recording the bass part, it probably means that the preceding note is too long. In this case, delete the note that precedes the one that won't play and try inputting it again. For details on how to delete notes, see the following section.
- If you make mistakes during your input, you can delete the sections you don't need. Press the DELETE button when it comes time for the note or chord you want to delete to be played. If you hold down the DELETE button during the play of an entire 2-measure phrase, the entire CHORD 1 part is deleted.
- To accent a previously input note, press the +/EXE button when the note you want to accent plays.
- To remove an accent that you have assigned to a percussion note, press the – button when the accented note plays.

5-5 After you finish inputting the CHORD 1 part, press the PLAY button to complete the input procedure.

- Pattern playback stops, and the keyboard re-enters standby for pattern recording, which is indicated by a flashing RECORD indicator.



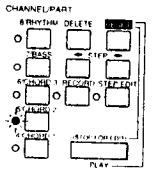
Flash

6. Record the Chord 2 part.

Important!

- You cannot input a note in the CHORD 2 part on the same beat where a note plays in the CHORD 3 part. This means that you should first delete notes from the CHORD 3 part as necessary. To delete the entire CHORD 3 part at this point, press the 6/CHORD 3 button to enter CHORD 3 part recording standby, and then press the PLAY button twice.

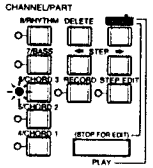
6-1 Press the 5/CHORD2 button so the 5/CHORD2 indicator is lit.



6-2 Continue with the CHORD 1 procedure described in Step5-2 on page *E-55* through Step5-5 above

7. Record the Chord 3 part.

7-1 Press the 6/CHORD3 button so the 6/CHORD3 indicator is lit.

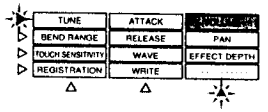


7-2 Continue with the CHORD 1 procedure described in Step5-2 on page *E-55* through Step5-5 on page *E-57*.

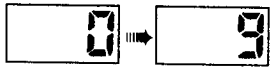
Important!
- Remember that CHORD 2 and CHORD 3 notes cannot be played on the same beat.

8. Perform Mixer programming for each accompaniment pattern.
For pattern programming, you can adjust the volume balance and stereo position using the Mixer.

8-1 Adjust the volume balance of each part.
- Press the MIXER button once to select VOLUME.



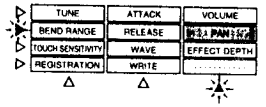
8-2 Press one of the buttons shown on the next page to select each part and then use the 10-key pad to set its volume within the range of 0 to 9.



Part	Button
Rhythm	8/RHYTHM
Bass	7/BASS
Chord 1	4/CHORD 1
Chord 2	5/CHORD 2
Chord 3	6/CHORD 3

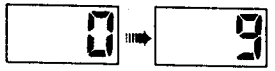
8-3 After you finish adjusting the volume balance for each part, set the stereo position (pan) of the each part.

- Press the MIXER button once to select PAN.



Important!
- If the PAN indicator does not light when you press the MIXER button, it means that the RHYTHM part is selected. You must select any part other than the RHYTHM part before you can select PAN with the MIXER button.

8-4 Press one of the buttons shown below to select each part and then use the 10-key pad to set its volume within the range of 0 to 9.



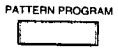
Part	Button
Bass	7/BASS
Chord 1	4/CHORD 1
Chord 2	5/CHORD 2
Chord 3	6/CHORD 3

- For details on the different PAN settings, see page *E-39*.

8-5 Press the PATTERN PROGRAM button to exit the Mixer Mode.

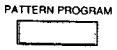
Important!
- Note that you cannot set the Mixer EFFECT DEPTH for pattern programming.

9. If you now want to program the variation pattern, press the PATTERN PROGRAM button once.



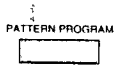
- If you want to skip variation pattern programming, go directly to Step10 without pressing the PATTERN PROGRAM button.
- Program the variation pattern using the same procedure for normal pattern programming. Use the procedure from Step2 on page *E-52* to Step8 on page *E-58*.

10. If you now want to program the fill-in pattern (and use the preset pattern), press the PATTERN PROGRAM button once.



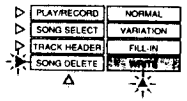
- If you want to skip variation pattern programming (and use the preset pattern), go directly to Step11 without pressing the PATTERN PROGRAM button.
- Program the fill-in pattern using the same procedure for normal pattern programming. Use the procedure from Step2 on page *E-52* to Step8 on page *E-58*.

11. Now save the programmed pattern into memory.

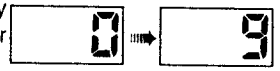


11-1 Press the PATTERN PROGRAM button once.

- The WRITE indicators lights to indicate that the keyboard is standing by to store the accompaniment pattern.



11-2 Use the 10-key pad to input the memory number where you want to store the user pattern.

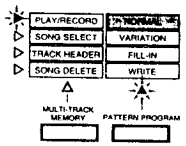


- The number you input appears on the display.

Important!

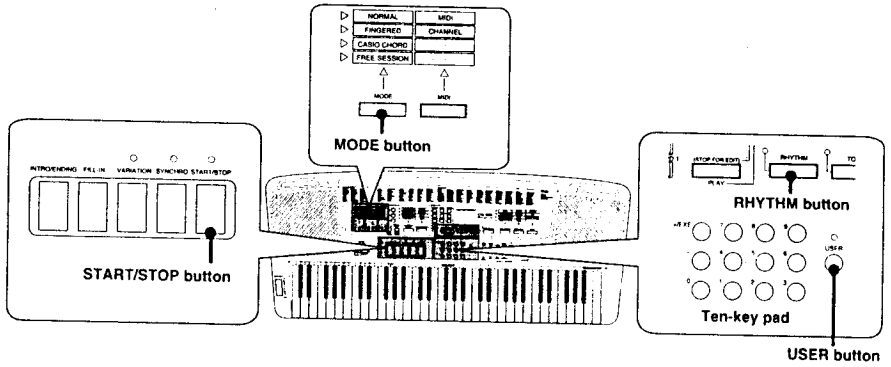
- If there is data already stored under the memory number you select, the following operation will delete the previous data and replace it with the new data.

11-3 Press the +/EXE button to store the pattern into memory or PATTERN PROGRAM to abort the memory storage operation and return to the PATTERN PROGRAM Normal Mode.



- Since you can store up to 10 patterns, it is a good idea to keep a written record of what you have stored under each memory number. You can find a Pattern Program Chart for your record keeping on page *A-4* of this manual.

To recall a user accompaniment pattern or rhythm pattern



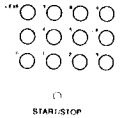
1. With power switched on, use the MODE button to select NORMAL (for a rhythm pattern), FINGERED, or CASIO CHORD.

- Note that you cannot select FREE SESSION for play of a user rhythm.

2. Press the RHYTHM button so the RHYTHM indicator lights.

3. Press the USER button so the USER indicator lights.

4. Use the 10-key pad to input the number of the user pattern you want to recall.



- The corresponding accompaniment pattern (or rhythm pattern if you selected NORMAL) plays when you press the START/STOP button. See page *E-18* for details on playing rhythm patterns, and page *E-21* for details on playing accompaniment patterns.

- If the number you input with the 10-key pad specifies a user rhythm number where there is no user rhythm stored, the preset rhythm that corresponds to the last two digits input is selected instead. If the number 5 is already shown on the display and you input 9, for example, preset rhythm 59 is selected automatically if there is no user rhythm 9.

Part 4 Using the Multi-Track Memory

■ Read this important information about memory back-up

This keyboard uses batteries to supply memory with the power it needs to retain its data, even when the keyboard is switched off. Should these batteries go dead, everything stored in memory whenever the main power supply is cut off (when the AC adaptor is unplugged). This means that you must be sure to keep fresh batteries installed in the keyboard, and you should keep the keyboard supplied with power via the AC adaptor whenever you change batteries. For details on what indicates low battery power and how to replace batteries, see page *E-8* of this manual.

Important!

- Note that CASIO Computer Co., Ltd. assumes no responsibility for any loss or claims by third parties arising through malfunction or repair of this keyboard, through battery replacement, or through the loss of data stored in the Multi-Track Memory.

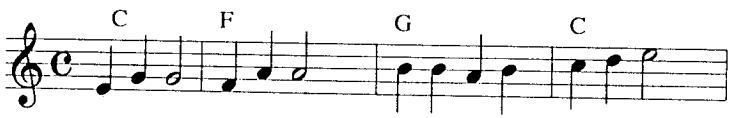
■ What is Multi-Track Memory?

The Multi-Track Memory of this keyboard lets you separately record one accompaniment track and three melody tracks for playback together.

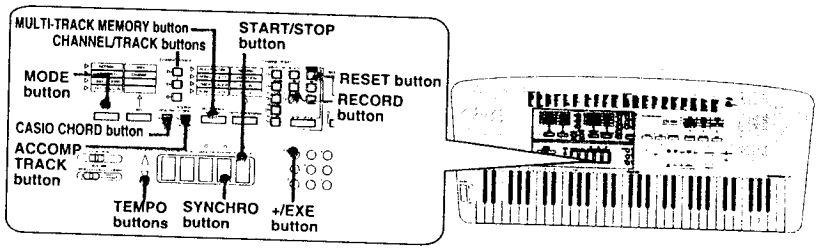
With a standard tape recorder, for example, how would a person go about recording all of the parts of a piece of music. First the drum part would be recorded on a tape. Then while playing the drum part back on one tape recorder, the musician would then record to a second tape recorder playing the bass part. This back-and-forth recording would be repeated as many times as necessary in order to record all of the parts required.

With Multi-Track Memory, you do not need two recording machines, because you can play back from one track while recording to another.

■ Basic Multi-Track Memory operation

The best way to illustrate how to use Multi-Track Memory is with an actual example. Here we will record the following score.

This simple example uses only two tracks: one for melody and the other for accompaniment.

To record to Multi-Track Memory



Note

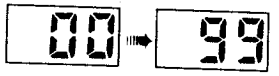
The following procedure assumes that there is nothing currently stored in Multi-Track Memory.

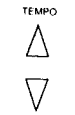
1. Slide the POWER switch to the ON position.
2. Press the MULTI-TRACK MEMORY button.

3. Record the ACCOMPANIMENT track.

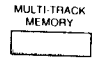
3-1 Press the ACCOMP TRACK button.
- This operation selects the ACCOMPANIMENT track for recording or playback.

3-2 Use the 10-key pad to select the rhythm you want to record.

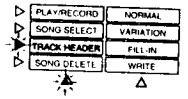




3-3 Use the TEMPO button to adjust the recording tempo.



3-4 Before starting actual recording, you should first register your ACCOMPANIMENT track parameters (the rhythm number and tempo in this example). To do this, first press the MULTI-TRACK MEMORY button twice to select TRACK HEADER.



3-5 Press the +/EXE button to register the ACCOMPANIMENT track parameters.

3-6 Press the CASIO CHORD button.

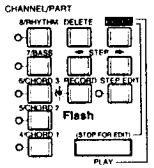
- When the CASIO CHORD indicator is lit, you can use the CASIO CHORD system to play chords on the accompaniment keyboard (page*E-21*).

Important!

It is not possible to store changes of rhythm pattern as part of the song. Each piece can be recorded with only one rhythm, although you can freely change patterns during playback.

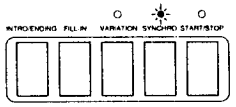
3-7 Press the RECORD button.

- At this time the RECORD indicator flashes and an audible count sounds. Recording still has not started yet.



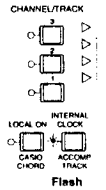
3-8 Press the SYNCHRO button.

- The SYNCHRO indicator lights and the keyboard enters synchro start standby (page *E-20*).
- Actual recording starts from the next step.



3-9 Play on the accompaniment keyboard.

- Playing the first chord on the accompaniment keyboard starts the record operation. At this time the RECORD indicator stops flashing (and remains lit), and the ACCOMP TRACK indicator starts to flash.
- Play the chords as they appear in the score on page *E-62*.



3-10 When you reach the end of the score, press the START/STOP button.

- Note that the accompaniment stops playing, but the record operation is still in progress.

3-11 Press the RESET button to stop the record operation.

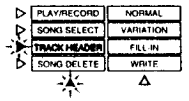
4. Next, record the melody part.

4-1 Press the CHANNEL/TRACK 1 button.

- This operation selects the melody track 1 for recording or playback.

4-2 Use the 10-key pad to select the tone you want to use.

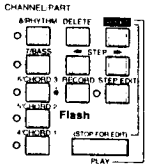
4-3 Before starting actual recording, you should first register your melody track parameters (the tone number in this example). To do this, first press the MULTI-TRACK MEMORY button twice to select TRACK HEADER.



4-4 Press the +/EXE button to register the melody track parameters

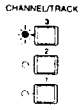
4-5 Press the RECORD button.

- At this time the RECORD indicator flashes and an audible count sounds. Recording still has not started yet.



4-6 Play on the keyboard.

- Playing the first note on the keyboard starts the record operation. At this time the RECORD indicator stops flashing (and remains lit), and the CHANNEL/TRACK 1 indicator starts to flash.
- Play the notes as they appear in the score on page *E-62*.



4-7 When you reach the end of the score, press the RESET button.

4-8 Now you can press the PLAY button to listen to the accompaniment and melody tracks play back together.

The above are the basics of Multi-Track Memory recording. In addition to the above, you can also record MELODY 2 and MELODY 3 tracks, and you can also make additional settings before and during actual recording.

■ Multi-Track Memory data and capacity

You can store a total of approximately 3,200 notes, in one or two songs in the Multi-Track Memory. The following shows the data that can be stored in Multi-Track Memory.

Part	Track Header Data		Real-Time Recording
	All Parts	Individual Parts	
Accompaniment	•Tempo •Effect selection	•Rhythm number •Part cancel selection	•accompaniment keyboard chord •Part cancel selection change •Rhythm controller operation
Melody Part 1 Melody Part 2 Melody Part 3		•Tone number •Bend range setting •Mixer setting	•Keyboard play •Tone number change •Pitch bender operation •Sustain pedal operation*

*Requires optionally available SP-2/SP-10 Sustain Pedal.

■ Recording to Multi-Track Memory

The following describes Multi-Track Memory operations in detail. For a simpler overview of the basics, see "Basic Multi-Track Memory operation" on page *E-62*.

Multi-Track Memory Operation Outline

The following shows the general flow for Multi-Track Memory operations.

Enter the Multi-Track Memory Mode.

1. Record the ACCOMPANIMENT part to ACCOMP TRACK.
   After registering parameters in the track header, record your chord progression in real time.
2. Record the MELODY 1 part to TRACK 1.
   After registering the parameters in the track header, record your melody in real time.
3. Record the MELODY 2 part to TRACK 2.
   After registering parameters in the track header, record your melody in real time.
4. Record the MELODY 3 part to TRACK 3.
   After registering parameters in the track header, record your melody in real time.

All operations are the same except for track section.

Note that you can perform the above procedure in the sequence shown, or you can perform any part of the procedure, skipping the steps you don't need.

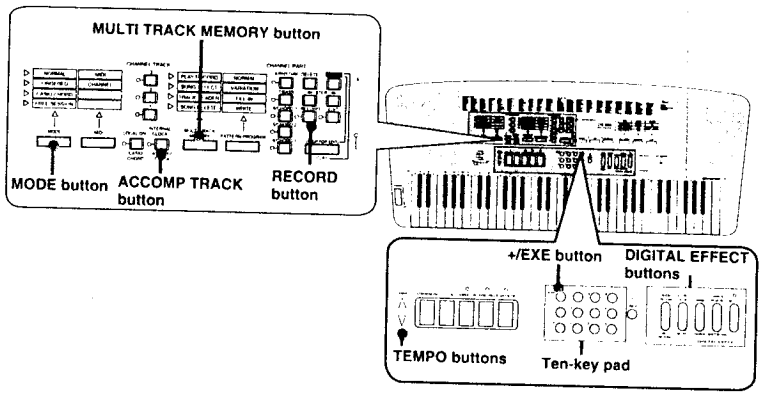
- If you want to record an accompaniment without using the keyboard's auto-accompaniment function, jump directly to "To record the ACCOMPANIMENT track" and start with recording of the melody to melody track 1.

Getting ready

Prepare the keyboard as described below.

1. Switch power on.
2. Check to see if there is anything stored in for the song that you plan to use for recording.
   - This is not an important concern when you are recording your first song. You should, however, always be careful before recording. This is because if you record to a song that already contains data, the previous data will be lost.

To record to Multi-Track Memory

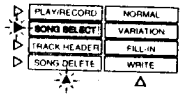


1. Specify the number of the song (memory) that you want to record to.

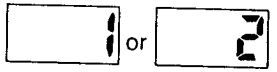
MULTI-TRACK MEMORY

1-1 Press the MULTI-TRACK MEMORY button twice to select SONG SELECT.

- At this time, the number of the last song selected appears on the display.

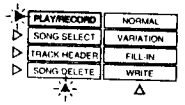


1-2 Use the 10-key pad to specify either 1 or 2 as the song number.



MULTI-TRACK MEMORY

1-3 After you specify a song number, press the MULTI-TRACK MEMORY button three times to select PLAY/RECORD.



To record the ACCOMPANIMENT track

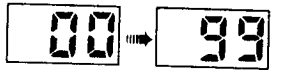
2. Press the ACCOMP TRACK button.

INTERNAL CLOCK
ACCOMP TRACK

- This operation selects the ACCOMPANIMENT track for recording or playback.

3. Set up the ACCOMPANIMENT track for recording.
   - All of the following settings will be registered in the track header.

3-1 Use the 10-key pad to select the rhythm you want to record.



TEMPO

3-2 Use the TEMPO button to adjust the recording tempo.

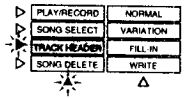
- When recording, we recommend that you keep the tempo setting below about 200. If you use a faster tempo, limitations on the processing capacity of the keyboard may cause problems with your recordings.

3-3 Switch off any accompaniment parts you don't want (see "Switching accompaniment parts on and off" on page *E-26*).

3-4 Use the DIGITAL EFFECT buttons to select the effects you want.

4. Register the ACCOMPANIMENT track parameters in the track header.

4-1 Press the MULTI-TRACK MEMORY button twice to select TRACK HEADER.



4-2 Press the +/EXE button to register the ACCOMPANIMENT track parameters.

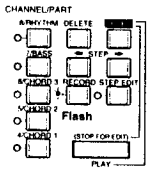
- The parameters are registered and the keyboard returns to the PLAY/RECORD Mode.

5. Select the chord fingering method you want to use.
- You can select either CASIO CHORD or FINGERED. For full details on these fingering methods, see "Using the CASIO CHORD system" on page *E-21*.
- If you want to use the CASIO CHORD system, press the CASIO CHORD button so that the indicator to the left of the button lights.
- If you want to use FINGERED, leave the CASIO CHORD indicator unlit.
- You can perform this step any time after Step2, as long as the record operation is not in progress.

6. Get ready to record.

6-1 Press the RECORD button.

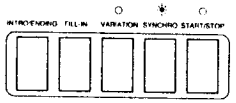
- At this time the RECORD indicator flashes and an audible count sounds. Recording still has not started yet.



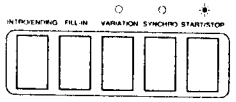
Important!
- Even if you switched off some parts in Step3-3 on page *E-67*, all of the part indicators light when you press the RECORD button. If you want to record with certain parts switched off, you must switch those parts off here again.

6-2 If you want to use synchro start, press the SYNCHRO button.

- The SYNCHRO indicator lights and the keyboard enters synchro start standby (page *E-20*).

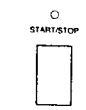


- If you want to use an intro pattern along with synchro start, press the INTRO/ENDING button. When you do, the SYNCHRO indicator goes out and the START/STOP indicator lights.

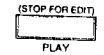


7. Start recording using one of the three procedures described below.

- If you selected synchro start in Step6-2 above, play a chord on the accompaniment keyboard to start recording.



- Press the START/STOP button to start rhythm play along with the record operation.



- Press the PLAY button to start the record operation. In this case, a blank is recorded until the rhythm or accompaniment starts to play.
- When recording starts, the RECORD indicator stops flashing (and remains lit), and the ACCOMP TRACK indicator starts to flash.

8. Play the accompaniment on the accompaniment keyboard (see "Using Auto-accompaniment" on page *E-21*). The following shows the data that is recorded.
- Chords played on the accompaniment keyboard
- Changes to the part on/off status
- START/STOP, SYNCHRO, FILL-IN, VARIATION, and INTRO/ENDING button operations

Important!
- You can use the START/STOP button or INTRO/ENDING button to stop play the auto rhythm or Auto Accompaniment pattern, but when you do you should note that the record operation continues, inserting a blank in the recording. You can press START/STOP or INTRO/ENDING to restart the rhythm or accompaniment, but the gap remains in the recording. Remember that the record operation continues until you press the RESET button.
- You cannot change the rhythm during recording. You can, however, change rhythms freely during playback.

9. After you finish inputting the accompaniment for the song you are recording, stop the record operation.

- Press the RESET button to stop the record operation. This also causes the RECORD indicator to go out.

10. Listen to what you recorded.

- Press the PLAY button to start the playback (page *E-72*).

- To stop the playback, press the RESET button.

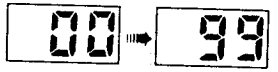
To record MELODY 1 track

11. Press the CHANNEL/TRACK 1 button.

- This operation selects the melody track 1 for recording or playback.

12. Set up the MELODY 1 track for recording.
- All of the following settings will be registered in the track header.

12-1 Use the 10-key pad to select the tone you want to record.



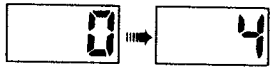
12-2 If you want to, use the following procedure to set the bend range.

TOTAL CONTROL

a. Press the TOTAL CONTROL button twice to select BEND RANGE.

b. Use the 10-key pad to set the bend range within the range of 0 to 4.

- See page *E-89* for full details on what each value means.



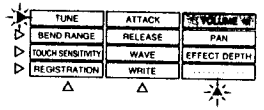
MULTI-TRACK MEMORY

c. Press the MULTI-TRACK MEMORY button to return to the Multi-Track Memory Mode.

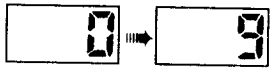
12-3 If you want to, use the following procedure to set Mixer parameters (see "Using the MIXER (VOLUME/PAN/EFFECT DEPTH)" on page *E-37*).

MIXER

a. Press the MIXER button once to select VOLUME.

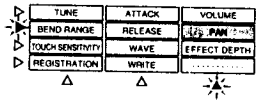


b. Use the 10-key pad to set the volume value within the range of 0 to 9.



MIXER

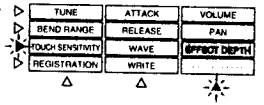
c. Press the MIXER button again to select PAN.



d. Use the 10-key pad to set the PAN value within the range of 0 to 9.

MIXER

e. Press the MIXER button to select EFFECT DEPTH.



f. Use the 10-key pad to set the EFFECT DEPTH value within the range of 0 to 3.

MULTI-TRACK MEMORY

g. Press the Multi-Track Memory button to return to the Multi-Track Memory Mode.

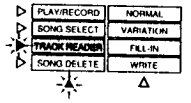
Note

- At this point, you can also change the tempo and effect settings. Note, however, that the same tempo and effect settings must be used for all tracks, and making a change here changes the settings for all tracks.

13. Register the MELODY 1 track parameters in the track header.

MULTI-TRACK MEMORY

13-1 Press the MULTI-TRACK MEMORY button twice to select TRACK HEADER.



+/EXE

13-2 Press the +/EXE button to register the MELODY 1 track parameters.

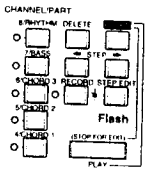
- The parameters are registered and the keyboard returns to the PLAY/RECORD Mode.

14. Get ready to record.

+/EXE

14-1 Press the RECORD button.

- At this time the RECORD indicator flashes and an audible count sounds. Recording still has not started yet.



Helpful tip...

Note that you can skip pressing the RECORD button in Step14 above, and proceed directly with Step15 through Step17. Doing so will allow you to practice before actually recording. After you practice, return to Step14 and press RECORD. You can then make the actual recording.

- You can cancel a record operation by pressing RECORD again or by pressing RESET.

Important!

- The next operation starts playback of tracks that you already have recorded. Even if you switched off some parts in Step3-3 on page *E-67*, all of the part indicators light when you press the RECORD button. If you want to record with certain parts switched off, you must switch those parts off here again.

15. Start recording using one of the two procedures described below.

(STOP FOR EDIT)
PLAY

- Play on the keyboard and the record operation start while the contents of the tracks you already have recorded plays back.
- Press the PLAY button and the record operation start while the contents of the tracks you already have recorded plays back. In this case, rests are inserted until you start to play on the keyboard.

16. Play the melody on the keyboard. The following shows the data that is recorded.

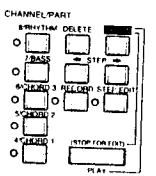
- Notes played on the keyboard
- Tone number changes (made using the 10-key pad during the record operation)
- Pitch bender operations
- Sustain pedal operations*

* Requires optionally available SP-2/SP-10 Sustain Pedal.

17. After you finish inputting the melody for the song you are recording, stop the record operation.

RESET

- Press the RESET button to stop the record operation. This also causes the RECORD indicator to go out.



18. Listen to what you recorded.

(STOP FOR EDIT) PLAY

- Press the PLAY button to start the playback (page *E-73*).

RESET

- To stop the playback, press the RESET button.

To record MELODY 2 track

19. Press the CHANNEL/TRACK 2 button.

2

- This operation selects the melody track 2 for recording or playback.

20. Perform the same procedures as for the MELODY 1 track, using Step12 on page *E-69* to Step18 above.

To record MELODY3 track

21. Press the CHANNEL/TRACK 3 button.

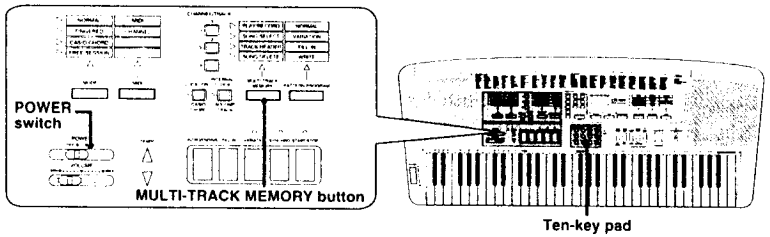
3

- This operation selects the melody track 3 for recording or playback.

22. Perform the same procedures as for the MELODY 1 track, using Step12 on page *E-69* to Step18 above.

■ To playback from the Multi-Track Memory

Use the following procedure to listen to the contents of the Multi-Track memory.



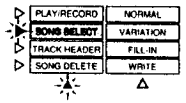
1. Switch power on.

POWER OFF ON

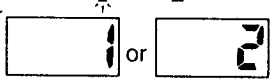
2. Select the song you want to play.

MULTI-TRACK MEMORY

2-1 Press the MULTI-TRACK MEMORY button twice to select SONG SELECT.

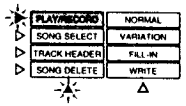


2-2 Use the 10-key pad to specify either 1 or 2 as the song number.



MULTI-TRACK MEMORY

2-3 After you specify a song number, press the MULTI-TRACK MEMORY button three times to select PLAY/RECORD.



3. Start playback.

(STOP FOR EDIT) PLAY

- Press the PLAY button to start playback of the selected song.

Important!

- Be sure not to press the START/STOP button. Doing so does not play back Multi-Track Memory contents, but starts play of an accompaniment pattern. If you press the START/STOP button by mistake, press it again to stop play of the rhythm and press PLAY to play back from the Multi-Track Memory.

Notes

- Pressing the STEP➡ button during playback causes the Multi-Track Memory contents to play back at double speed.
- If you reach the end of the recording while holding down the STEP➡ button, a tone sounds to alert you. Press the RESET button to go back to the beginning of the recording.
- Note that the ⬅STEP button does not operate the same as the STEP➡ button. The ⬅STEP button is used during the step editing procedure (page *E-76*) only. If you press the ⬅STEP button while playing back from the Multi-Track Memory, playback may become abnormal when you release the button. Should this happen, press the RESET button to correct the situation.
- You can change the tempo of playback using the TEMPO buttons. However, we recommend that you keep the tempo setting below about 200.
  If you use a faster tempo, limitation on the processing capacity of the keyboard may cause problem with your playback.

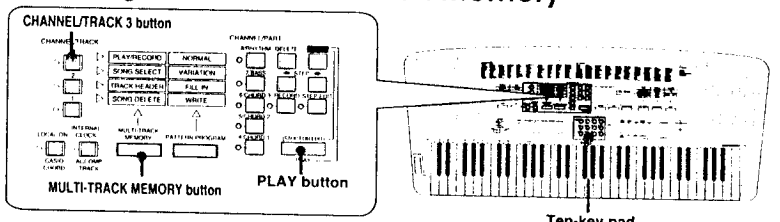
4. To stop playback, press the RESET button.

RESET

■ Playing along with the Multi-Track Memory

This section explains how to play along on the keyboard with Multi-Track Memory playback. With the following procedure, it is assumed that the ACCOMPANIMENT, MELODY 1, and MELODY 2 tracks have been recorded. The keyboard, in effect, provides the part for MELODY 3.

To play along with the Multi-Track Memory

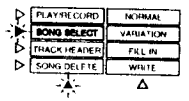


1. Switch power on.

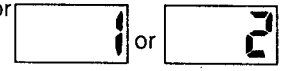
2. Select the song you want to play along with.

MULTI-TRACK MEMORY

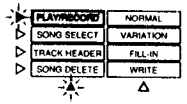
2-1 Press the MULTI-TRACK MEMORY button twice to select SONG SELECT.



2-2 Use the 10-key pad to specify either 1 or 2 as the song number.

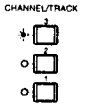


2-3 After you specify a song number, press the MULTI-TRACK MEMORY button three times to select PLAY/RECORD.



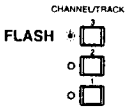
3. Select the part you will play on the keyboard.

- For this example, press the CHANNEL/TRACK 3 button.
- The indicator to the left of button 3 lights.



4. Start playback.

- Press the PLAY button to start playback of the selected song.
- At this time, the indicator to the left of button 3 starts to flash.



Important!

- Be sure not to press the START/STOP button. Doing so does not play back Multi-Track Memory contents, but starts play of an accompaniment pattern. If you press the START/STOP button by mistake, press it again to stop play of the rhythm and press PLAY to play back from the Multi-Track Memory.

5. Play along on the keyboard.

Notes

- In Step3 above, you can use the CHANNEL/TRACK button to select parts 1, 2, or 3 for play along on the keyboard. If you select a previously recorded track, however, the tone and other parameters that were registered when that track was recorded are automatically set.
- If you press the ACCOMPANIMENT part button in place of a CHANNEL/TRACK button in Step3 above, you will not be able to play a melody. In such a case, you will be able to play chords on the accompaniment keyboard, and you will be able to operate the VARIATION and FILL-IN buttons. Note, however, that any chords, VARIATION button, and FILL-IN button operations recorded in the Multi-Track Memory are given priority.
- You can switch parts on and off at any time during this operation. Note, however, that any part on/off operations recorded in the Multi-Track Memory are always given priority.
- You cannot mute specific tracks during playback.

Helpful tip...

If you plan to play along with the Multi-Track Memory, it is best to register the tone and Mixer parameters in the track you plan to play back in (track 3 in the above example).

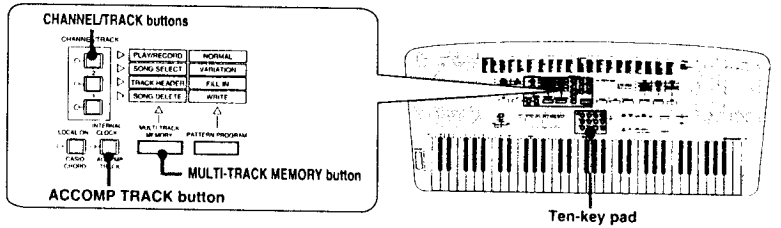
■ Editing Multi-Track Memory contents

You can use either of the two following methods to edit Multi-Track Memory contents.

- Re-recording of an entire track
- Step editing

When editing the ACCOMPANIMENT track, you should re-record the entire accompaniment. For MELODY tracks, you can use either of the two methods for editing.

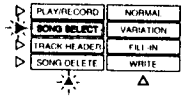
To re-record an entire track



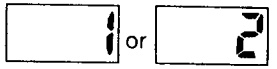
1. Switch power on.

2. Select the song you want to edit.

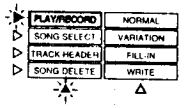
2-1 Press the MULTI-TRACK MEMORY button twice to select SONG SELECT.



2-2 Use the 10-key pad to specify either 1 or 2 as the song number.



2-3 After you specify a song number, press the MULTI-TRACK MEMORY button three times to select PLAY/RECORD



3. Select the track you want to edit.
   - You can press the ACCOMP TRACK button if you want to edit the ACCOMPANIMENT track, or CHANNEL/TRACK 1, 2, or 3 to edit a MELODY track..

4. Use the same procedure that you use for recording a Multi-Track Memory track, as described under "To record to Multi-Track Memory" on page *E-67*.

About step editing

With step editing, you can change the contents of a track note-by-note. It comes in handy when you want to correct mistakes made while recording in real time. Remember that step editing can be used only to edit melody tracks.

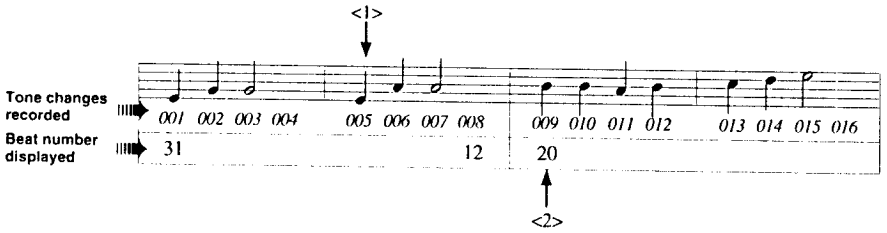
The following are two possible techniques you can use with step editing.

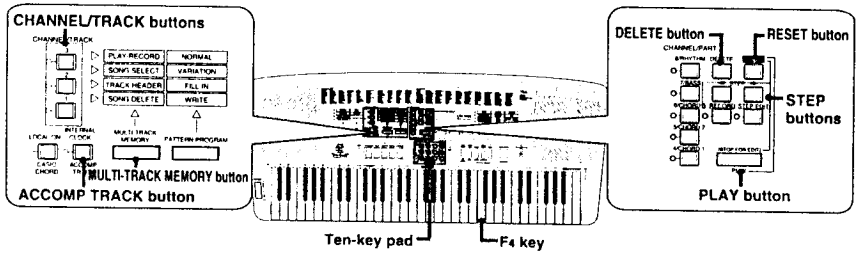
- **Changing or deleting a single note**
  You can, for example, change the a recorded melody from C - E - G - G to C - E - F - G. Or you can delete any of the notes from the melody. Deleting a note causes it to be replaced with a rest that is as long as the note that was deleted.

- **Changing or deleting a tone number specification**
  Let's say you register tone 10 in the track header, and then later change it to tone 20 in the 15th measure. You can later change the tone specified in the 15th measure to another one, or you can delete it entirely.

To step edit a track

The following procedure is based on the following score.



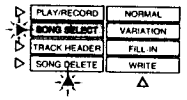


1. Switch power on.

2. Select the song you want to edit.

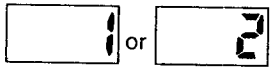
   MULTI-TRACK MEMORY

   2-1 Press the MULTI-TRACK MEMORY button twice to select SONG SELECT.

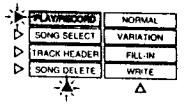
   0 0 0 0 / 0 0 0 0 / 0 0 0 0

   2-2 Use the 10-key pad to specify either 1 or 2 as the song number.

MULTI-TRACK MEMORY

2-3 After you specify a song number, press the MULTI-TRACK MEMORY button three times to select PLAY/RECORD.



3. Select the track you want to edit.
   - You can press CHANNEL/TRACK 1, 2, or 3 to edit a melody track.

Important!
- Pressing ACCOMP TRACK here does select the ACCOMPANIMENT track, but you will not be able to edit the ACCOMPANIMENT track using this procedure.

4. Start playback.
   - Press the PLAY button to start playback.

5. Press the PLAY button again (at this time the PLAY button act as "STOP FOR EDIT" button*) to temporarily stop playback for editing.
   * The "STOP FOR EDIT" button is essentially a PAUSE function, but it is for editing purposes only. It is not designed for resuming play after pausing.

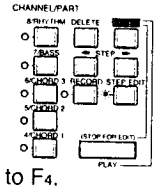
6. Change the note marked <1> on the score from E4 to F4.

   STEP

   6-1 Press STEP➡ until the note you want sounds (for this example, the note E4, which is marked <1> on the score). If you go past the note, press ⬅STEP to move back.

   STEP EDIT

   6-2 Press the STEP EDIT button.
   - The STEP EDIT indicator lights, indicating that step editing can be performed.
   - The STEP EDIT indicator switches on and off each time you press the STEP EDIT button.

   6-3 Press the F4 key on the keyboard to change E4 to F4.
   - If you press the DELETE button in place of the E4 key here, the note is deleted and a corresponding rest is inserted.

7. Next, change the tone number at location <2> in the score from 20 to 35.

   STEP

   7-1 Use STEP➡ locate the tone specification you want to edit (for this example <2> on the score). Tone specifications are indicated bell-type sound during playback using the STEP buttons. When you hear this sound, stop and proceed with the following steps. If you go past the strike, press ⬅STEP to move back.

   0 0 0 0 / 0 0 0 0 / 0 0 0 0

   DELETE

   7-2 Use the 10-key pad to specify a different tone number.
   - To make the change to 35 for this example, press 3 and then 5.
   - If you press the DELETE button here, the tone change operation is deleted.

8. Exit step edit operation.

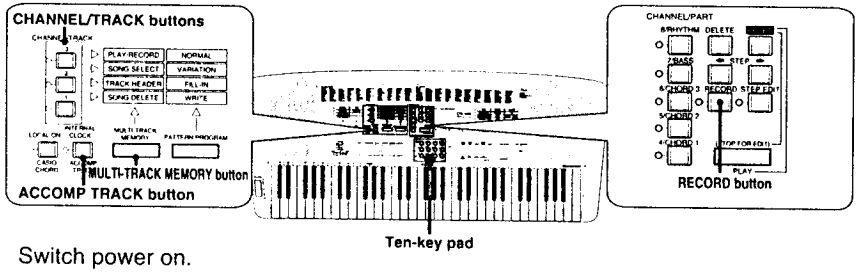
- Press the RESET button to exit the step edit operation.

Important!
- Be sure to press the RESET button to complete step editing. If you press the "STOP FOR EDIT" button in Step 8, the tracks would not be synchronized.

■ Deleting Multi-Track Memory contents

You can delete single tracks or entire songs from the Multi-Track Memory.

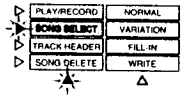
To delete a single track



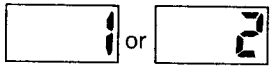
1. Switch power on.

2. Select the song whose track you want to delete.

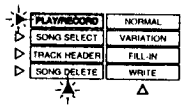
2-1 Press the MULTI-TRACK MEMORY button twice to select SONG SELECT.



2-2 Use the 10-key pad to specify either 1 or 2 as the song number.



2-3 After you specify a song number, press the MULTI-TRACK MEMORY button three times to select PLAY/RECORD.



3. Select the track you want to delete.
   - You can press the ACCOMP TRACK button if you want to delete the ACCOMPANIMENT track, or CHANNEL/TRACK 1, 2, or 3 to delete a melody track.

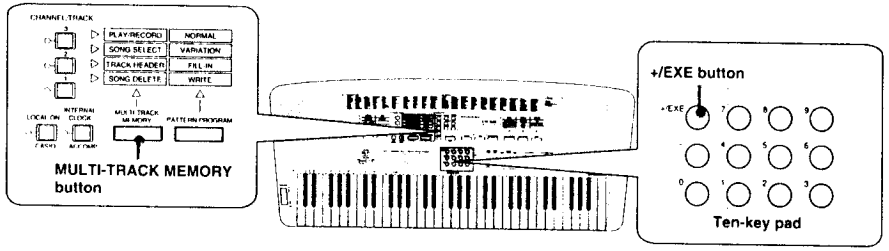
4. Press the RECORD button.

Important!
- The next operation deletes the contents of the selected track.
- To abort the delete operation here without deleting anything, press the RESET button.

5. Press the PLAY button to delete the track's contents.

6. Press the RESET button to complete the procedure.

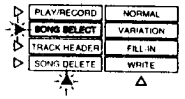
To delete an entire song



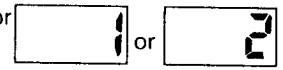
1 Switch power on.

2. Select the song you want to delete.

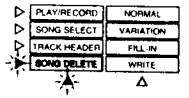
2-1 Press the MULTI-TRACK MEMORY to select SONG SELECT.



2-2 Use the 10-key pad to specify either 1 or 2 as the song number.



3. Press the MULTI-TRACK MEMORY button twice to select SONG DELETE..



Important!
- The next operation deletes the contents of the selected song.
- To abort the delete operation here without deleting anything, press the MULTI-TRACK MEMORY button once to return to PLAY/RECORD.

4. Press the +/EXE button to delete the song's contents and return to PLAY/RECORD.

Part 5 MIDI

■ What is MIDI?

"MIDI" stands for Musical Instrument Digital Interface, which is a worldwide standard for the exchange of digital signals produced by electronic musical instruments and devices. MIDI lets you easily exchange data with other MIDI devices, regardless of maker or model.

■ What the MIDI Mode allows you to do

The MIDI mode of this keyboard makes it possible for you to send and receive a variety of digital data.

Send

- You can connect to a MIDI device to sound the notes you play on the keyboard. This provides you with the means of playing two instruments at once, for richer sound and expanded versatility.
- You can connect to a sound module*1 to provide you with a wider selection of tones.
- You can connect to a commercially available MIDI sequencer*2 to record your keyboard play.

Receive

- You can connect to a MIDI device and sound notes played on the device using the keyboard's tones.
- You can connect to a commercially available MIDI sequencer*2 to playback on your keyboard. With this configuration, you can simultaneously play up to eight tones, while playing the keyboard's rhythm patterns.

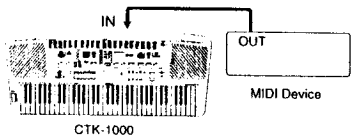
*1 A sound source which can be controlled by an external MIDI devices.
*2 An external module that performs recording capabilities similar to the keyboard's Multi-Track Memory. Using a sequencer that can store data on disks or cards provides you with virtually unlimited storage for your recordings.

■ About the MIDI terminals

MIDI terminals are equipped to provide a place to connect special MIDI cables that carry digital signals between MIDI devices. The CTK-1000 features MIDI IN and MIDI OUT terminals.

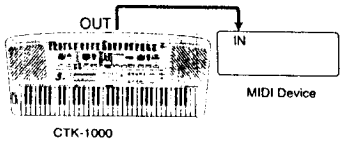
MIDI IN

- This is an input terminal that connects to the MIDI OUT terminal of another device. Data passes from the MIDI OUT terminal of the sending unit to the MIDI IN terminal of the receiving unit.



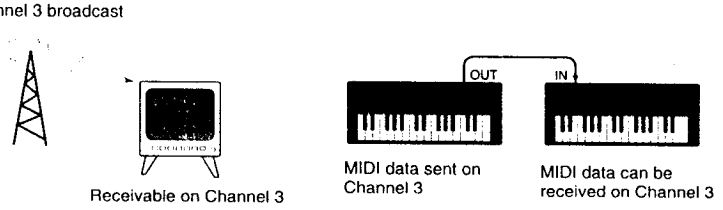
MIDI OUT

- This is an output terminal that connects to the MIDI IN terminal of another device. Data passes from the MIDI OUT terminal of the sending unit to the MIDI IN terminal of the receiving unit.



■ What is a MIDI channel?

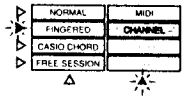
MIDI channels range from 1 through 16, and you can think of them as being similar to the channels on your television. Just as your TV has to be tuned into channel 3 to receive broadcasts on that channel, a receiving MIDI device cannot receive MIDI channel 3 data unless it is set properly to channel 3.



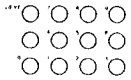
It is important to note here that this keyboard employs its channels differently for send and receive operations.
When sending, single channel (from 1 to 8) is used to send all data. This channel is called the basic channel. You can specify the basic channel by using the procedure described under "To set the basic channel", below.
For the receive operation, all eight channels* are used for simultaneous receipt of multiple parameters. Using our TV example, this is the same as having a television that can simultaneously show the pictures from 8 different channels on the screen at the same time.

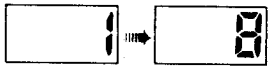
■ To set the basic channel

1. Switch power on.
2. Press the MIDI button twice to select CHANNEL.

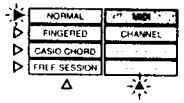


3. Use the 10-key pad to specify a channel within the range of 1 through 8.





4. Press the MIDI button once to select MIDI.



Important!

- The keyboard automatically selects tone 50 PERCUSSION whenever you set channel 8 as the basic channel.

■ MIDI multi-channel receive

This keyboard is capable of simultaneously receiving MIDI data over channels 1 through 8.* This means that up to eight tones can be played by the keyboard simultaneously when data is received from an external sequencer or other device. In addition to the eight tones, it can also play a rhythm pattern.

Note that the keyboard is automatically set up to simultaneously receive eight tones as soon as you enter the MIDI Mode. You do not need to perform any set up procedure.

*Actually, only channels 1 through 7 can be used for any type of preset tone data. Channel 8 is always reserved for percussion data (50 PERCUSSION).

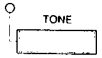
Specifying a tone for each channel

When you are using MIDI to play this keyboard from an attached sequencer, the tones for each channels are usually specified from the sequencer by Program Change messages. In some cases (like when you are recording from the keyboard to the sequencer), you might want to specify a tone for each of the channels (1 to 7) from the keyboard. In such a case, use the following procedure to specify the tones.

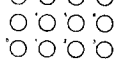
To specify a tone for each channel

1. Switch power on.
   - Note that whenever you enter the MIDI mode, channels 1 through 7 are all set to PIANO 1
2. Press the MIDI button twice to select CHANNEL.

3. Press the TONE button.

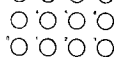


4. Use the 10-key pad to specify the channel that you want to specify a tone for, within the range of 1 through 7.



5. Press the MIDI button once to select MIDI.

6. Use the 10-key pad to specify the number of the tone you want to specify.



7. Press the MIDI button once to select CHANNEL.

8. Repeat Step4 through Step7 as many times as necessary to set the other channels.

Note

- You can also change the tone settings for each channel by sending a program change from the connected external MIDI device.

Switching specific channels on and off

You can switch any of the eight receive channels on and off as desired. The following shows the buttons you should use to switch each MIDI channel on and off.

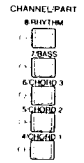
Channel	Button
Channel 1	CHANNEL TRACK 1
Channel 2	CHANNEL TRACK 2
Channel 3	CHANNEL TRACK 3
Channel 4	4/CHORD 1
Channel 5	5/CHORD 2
Channel 6	6/CHORD 3
Channel 7	7/BASS
Channel 8	8/RHYTHM

The indicators for the above buttons indicate the corresponding channel's on/off status. The channel is on if the indicator is lit, and off if the indicator is not lit.

To adjust the volume balance of each channel

1. Press the MIXER button to select VOLUME.

2. Adjust the volume balance of each channel.



   - Press the button to select the channel you want to adjust (see table below), and then input a value from 0 to 9 on the 10-key pad to adjust the volume.

Channel	Button
Channel 1	CHANNEL TRACK 1
Channel 2	CHANNEL TRACK 2
Channel 3	CHANNEL TRACK 3
Channel 4	4/CHORD 1
Channel 5	5/CHORD 2
Channel 6	6/CHORD 3
Channel 7	7/BASS
Channel 8	8/RHYTHM

3. After you complete the volume balance adjustment, press the MIDI button to return to the MIDI Mode.

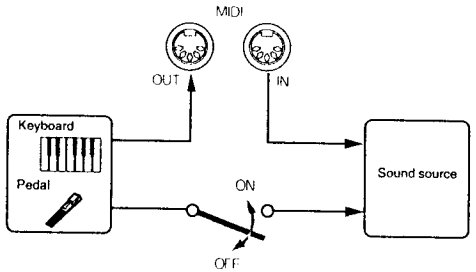
4. After you complete the volume balance adjustment, press the MIDI button to return to the MIDI Mode.

Notes

- In the MIDI mode, the default volume setting for all channels is 7.
- Note that when you press the MODE button to exit the MIDI Mode and return to the Normal or Auto Accompaniment Mode, the volume settings in the MIDI Mode are retained.

■ Local control settings

You can use local control to specify whether keyboard or pedal operations should be output through MIDI OUT only, or whether they should be applied to the local (the instrument you are playing) sound source.



LOCAL CONTROL

As the above illustration shows, local control is normally switched on. When local control is switched off, playing on the keyboard and operating the pedal does not affect the keyboard itself, but only affects the connected MIDI device.

Use the following procedure to switch local control on and off.

To switch local control on and off

1. Switch power on.

2. Press the MIDI button once to enter the MIDI Mode.

3. Press the LOCAL ON button to switch local control on and off.

- Local control is on when the LOCAL ON indicator is lit, and off when the indicator is not lit. The on/off status (and the indicator) switches on and off each time you press the LOCAL ON button.

■ Switching between external and internal clock

You can select either an external or internal clock for MIDI operations. The following describes the send and receive operations of each.

• Internal Clock

When you start a play of a rhythm on this keyboard, a start message is sent and MIDI clock is started. When you stop the rhythm, a stop message is sent and the MIDI clock is stopped.

• External Clock

Receipt of a start message by this keyboard starts play of its rhythm pattern. Receipt of a stop message stops the rhythm.

Use the following procedure to select between an internal and external clock.

To switch between internal and external clock

1. Switch power on.

2. Press the MIDI button once to enter the MIDI Mode.

3. Press the INTERNAL CLOCK button to switch between internal clock and external clock.

- Internal clock is selected when the INTERNAL CLOCK indicator is lit, and external clock is selected when the INTERNAL CLOCK indicator is not lit. The internal/external off status (and the indicator) switches on and off each time you press the INTERNAL CLOCK button.

■ Transferable MIDI data

This section describes the data that this keyboard is able to send and receive. When reading this section, you should also refer to the MIDI Implementation chart at the end of this manual as required. The MIDI Implementation Chart is a MIDI standard chart that shows how data transfer is performed by this keyboard.

NOTE ON, NOTE OFF, NOTE NUMBER, VELOCITY Data

This keyboard can send and receive four types of keyboard data: NOTE ON (keyboard depressed), NOTE OFF (keyboard released), NOTE NUMBER (which key), and VELOCITY (keyboard pressure). Note that NOTE OFF data is sent as VELOCITY = 0.

PROGRAM CHANGE Data

The PROGRAM CHANGE data that can be send by this keyboard consists of data that indicates a change in tone or rhythm. When the external device receives such data, it makes the corresponding changes.

Important!

- When the RHYTHM and USER indicators are lit (indicating that a user rhythm is selected), only a single digit appears on the display, even when you input a two-digit number. Note, however, that both digits are sent as PROGRAM CHANGE data. If the display shows only 0 and you input 45 on the 10-key pad, for example, PROGRAM CHANGE data 04, 45 is sent.
- When specifying a user rhythm as a PROGRAM CHANGE, be sure to input leading zeros to specify two-digit numbers. To specify user rhythm 4, for example, you should press 0 and then 4 on the 10-key pad.
- Note that you can also send the USER button on/off status (which specifies whether the tone is a preset tone or a user tone) as CONTROL CHANGE data. See "CONTROL CHANGE Data" below for details.

• Receive

A tones in the range 00 to 99 are recalled for the PROGRAM CHANGE data received over channels 1 through 7. Data is ignored if it is in the range of 100 to 127. CONTROL CHANGE data received prior to the PROGRAM CHANGE data can be used for bank select, which specifies whether the tone is a preset tone or a user tone. See "CONTROL CHANGE Data" below for details.

For channel 8, the received two-digit value is used to recall a preset rhythm in the range of 00 to 99. Data is ignored if it is in the range of 100 to 127.

CONTROL CHANGE Data

CONTROL CHANGE data can be used to send and receive data on the status (depressed/released) of the optionally available sustain pedal, data on Mixer parameters, and bank select data, which selects between preset and user tones. The following table shows send and receive conditions.

Item	CONTROL CHANGE	CTK-1000 Parameter Value	Send Data	Receive Data
Modulation	01	–	(Not sent)	0 - 127
Volume	07	0	0	0 - 32
		1	64	33 - 68
		2	72	69 - 76
		3	80	77 - 84
		4	88	85 - 92
		5	96	93 - 100
		6	104	101 - 112
		7	120	113 - 122
		8	124	123 - 125
		9	127	126 - 127

Item	CONTROL CHANGE	CTK-1000 Parameter Value	Send Data	Receive Data
Pan	10	1	0	0 - 25
		2	43	26 - 50
		3	64	51 - 76
		4	96	77 - 101
		5	127	102 - 127
Sustain Pedal*	64	OFF	0	0 - 63
		ON	127	64 - 127
Effect Depth	91	0	0	0 - 31
		1	43	64 - 127
		2	–	–
		3	–	–
Bank Select	0(MSB)/32(LSB)	User	0/1	0/1
		Preset	0/0	(Other than the above)

* This data is not sent or received for channel 8.

Note

When this keyboard receives a data value in the range of 32 to 64 for CONTROL CHANGE message 91 (Effect Depth), its EFFECT DEPTH setting becomes a value from 0 to 1 as noted below.

MIDI range sent	Depth should be:	MIDI result
0 - 31	0	0
32 - 63	1	0.5
64 - 95	2	1
96 - 127	3	1

CLOCK MESSAGE Data

For details on the CLOCK MESSAGE data for rhythm start and stop, see "Switching between external and internal clock" on page *E-85*.

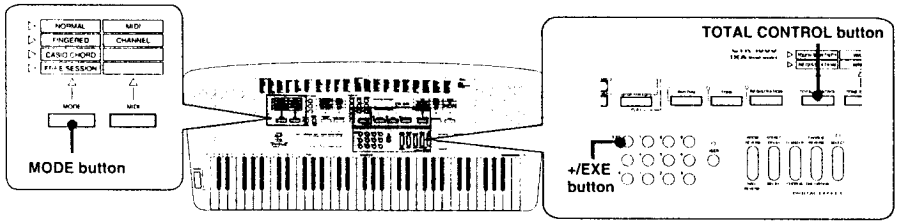
Note

The auto-rhythms, auto-accompaniment data, and demo songs do not transfer over MIDI.

Part 6 Other Settings

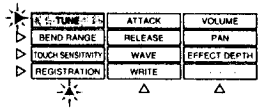
This part of the manual details other general settings.

■ To tune the keyboard



1. Press the TOTAL CONTROL button to select TUNE.

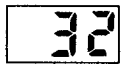
TOTAL CONTROL



- At this time, the RHYTHM indicator lights and the display shows 00, which indicates default tuning of A_4 = 440Hz.
- You can perform this procedure while the keyboard is in the Normal, Accompaniment, MIDI, Pattern Programming, or Multi-Track Memory mode.

2. Tune the keyboard.

+/EXE
-



- Press +/EXE to raise the displayed value or - to lower it. Each press of these buttons changes the displayed value by one. Holding down either key changes the tuning value at high speed.
- You can change the tuning value within the range of -64 to 64. A value of -64 is one half note lower than the default, while 64 is a half note higher than the default.
- The RHYTHM indicator is lit when the initial default value is set, the TONE indicator is lit when the current setting is less than the default, and the REGISTRATION indicator is lit when the current setting is greater than the default.

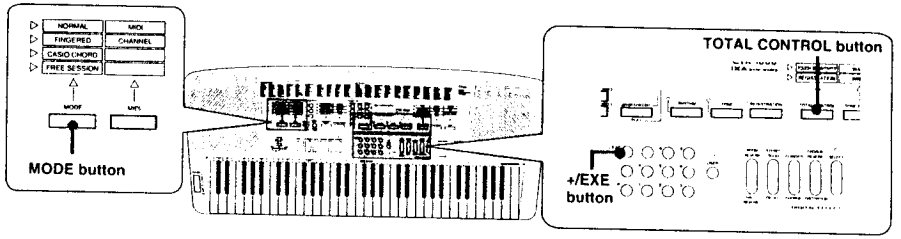
+/EXE
-

- To return to the tuning to its original default value, press both the +/EXE and the - keys at the same time.

3. If you started this procedure from the Normal or Accompaniment Mode, press the MODE button to complete it. Otherwise, press the mode button for the mode that you started from (the mode button whose indicator is lit).

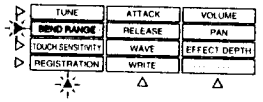
MODE

■ To set the bend range



1. Press the TOTAL CONTROL button to select BEND RANGE.

TOTAL CONTROL



- You can perform this procedure while the keyboard is in the Normal, Accompaniment, MIDI, Pattern Programming, or Multi-Track Memory mode.

2. Set the bend range.

+/EXE
-

- Set a value in the range of 0 to 4. Press +/EXE to raise the displayed value or - to lower it. The following table shows the meaning of each value.

Setting	Meaning
0	No change
1	1 half-tone
2	2 half-tones
3	3 half-tones
4	4 half-tones

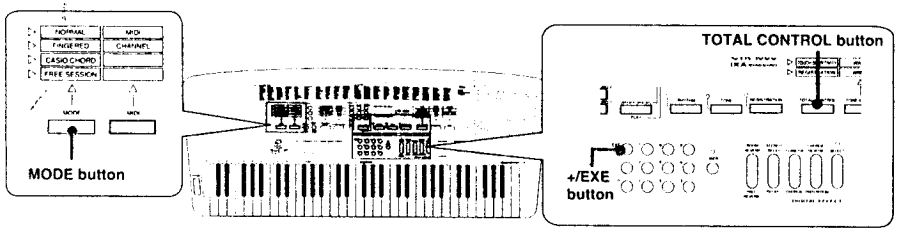
MODE

- If you started this procedure from the Normal or Accompaniment Mode, press the MODE button to complete it. Otherwise, press the mode button for the mode that you started from (the mode button whose indicator is lit).

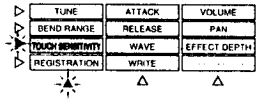
Note

- Settings are valid only while power is on. Switching power off and then on again returns the bend range to the default setting of 2. If you need to often change the bend range, store the settings you need as registration setups (page *E-45*).

■ To set the touch sensitivity



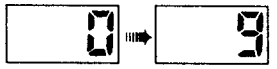
1. Press the TOTAL CONTROL button to select TOUCH SENSITIVITY.



- You can perform this procedure while the keyboard is in the Normal, Accompaniment, MIDI, Pattern Programming, or Multi-Track Memory mode.

2. Set the touch sensitivity.

- +/EXE to raise the displayed value or – to lower it.
- Set a value in the range of 0 to 9. A higher value means greater sensitivity, while a lower value means reduced sensitivity. A setting of 0 means that touch sensitivity is switched off.



- The initial default value is 9.

- If you started this procedure from the Normal or Accompaniment Mode, press the MODE button to complete it. Otherwise, press the mode button for the mode that you started from (the mode button whose indicator is lit).

■ Initializing the keyboard

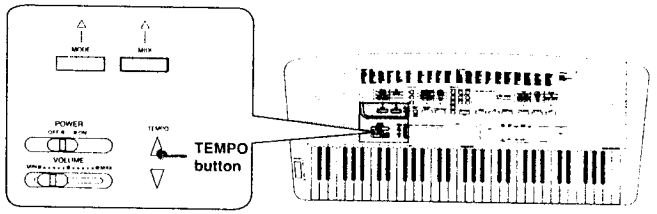
The procedure described here initializes the keyboard to its default settings. The following table shows the initial settings.

Item	Initial Default
Multi-Track Memory	Empty
Pattern Program Memory	Empty
User Tone Memory	Same as presets
User Rhythm Memory	Same as presets
Registration Memory	Empty

Important!

- The following operation clears all data stored in the keyboard's memories. Make sure that you really do not need the data before you perform this operation!

To initialize the keyboard



1. Switch power off.

2. Holding down both of the TEMPO buttons, switch power on.

- The display initially shows the number 00, followed shortly by 120.
- Release the TEMPO buttons.

Part 7 Technical Reference

■ Troubleshooting

Be sure to check the following table whenever you experience problems with keyboard operation.

Problem	Possible Causes	Action
No sound when I play the keyboard.	1. Power supply problem.	1. Connect AC adaptor correctly and make sure that batteries are loaded with their positive (+) and negative (-) poles facing correctly.
	2. VOLUME setting is too low.	2. Move the VOLUME slider more towards the maximum setting.
	3. Headphones are plugged in.	3. Unplug the headphones.
	4. Attempt to play normally on the accompaniment keyboard while FINGERED is selected.	4. Press the MODE button to select NORMAL.
	5. CHANNEL/TRACK 1 is set to off (CHANNEL/TRACK 1 lamp is not lit)	5. Press CHANNEL/TRACK 1 button so that the lamp is lit.
Rhythm does not play.	1. RHYTHM part is switched off.	1. Press 8/RHYTHM so its indicator is lit.
	2. RHYTHM part volume is set to 0.	2. Use the Mixer to increase the RHYTHM volume.
Power is off, even though POWER switch is set to ON.	1. Auto Power Off function switched power off.	1. Switch power back on.
	2. Power supply problem.	2. Connect AC adaptor correctly and make sure that batteries are loaded with their positive (+) and negative (-) poles facing correctly.
Following symptoms occur when using batteries. • Flashing numbers on the display • Low volume • Tone that sounds is different from the one that is selected • Recorded data and demo tune do not play correctly • Stop producing sound suddenly and change to the keyboard's initial settings • Power switches off suddenly	Dead batteries	Correctly replace the batteries.

■ Care of Your Keyboard

Avoid heat, humidity or direct sunlight.
Do not overexpose the unit to direct sunlight, or place near an air conditioner, or in any extremely hot place.

Take care not to drop the unit and avoid strong impact.
Strong impact may cause malfunctions. When carrying or transporting the unit, protect the keyboard and switches with soft cloth or other material.

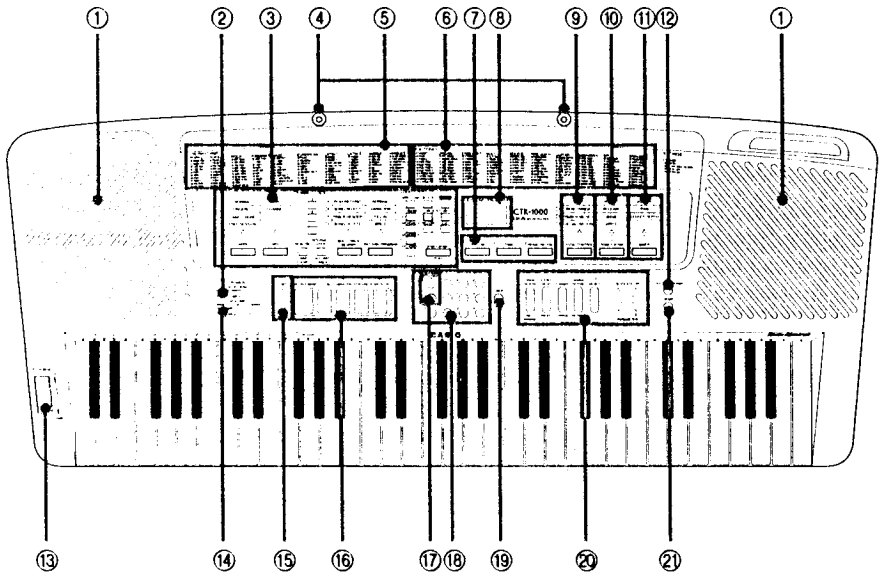
Keep the unit free of liquids, dust, etc.
Do not allow foreign matter to get between the keys, especially metallic objects such as hairpins, sewing needles or coins. Also, do not let the unit get wet.

Never attempt to modify any parts of the unit.
The unit is a precision instrument, made of electronic parts. Any modification of, or tampering with inner parts may cause malfunction.

Do not use lacquer, thinner or similar chemicals for cleaning.
Clean the keyboard with a soft cloth dampened in a weak solution of water and a neutral detergent. (Soak the cloth in the solution and squeeze until it is almost dry.)

■ Control Locations

Front panel control locations

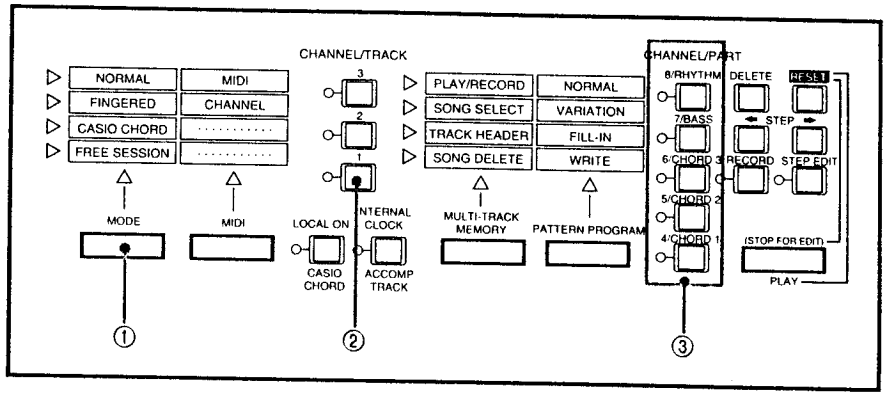


① Speakers
② POWER switch
③ *The buttons included here change their functions according to the Mode selected. See "Control buttons in each Mode" on the next page.
④ Holes for score stand
⑤ 100 RHYTHMS list
⑥ 100 TONES list
⑦ • RHYTHM button
• TONE button
• REGISTRATION button
⑧ 3-digit display
⑨ • TOTAL CONTROL button
• TOTAL CONTROL menu
⑩ • TONE EDITOR button
• TONE EDITOR menu
⑪ • MIXER button
• MIXER menu
⑫ TOUCH RESPONSE button
⑬ PITCH BEND wheel
⑭ VOLUME slider
⑮ TEMPO buttons
⑯ Rhythm control buttons
⑰ • +/EXE (execute) button
• – button
⑱ 10-key pad
⑲ USER button
⑳ DIGITAL EFFECT buttons (including QUICK EDITOR buttons)
㉑ DEMO button

Control buttons in each Mode

See "General Overview of CTK-1000 Operation" on page *E-9* for information on each Mode of this keyboard.

<Normal Mode / Auto-Accompaniment Mode>

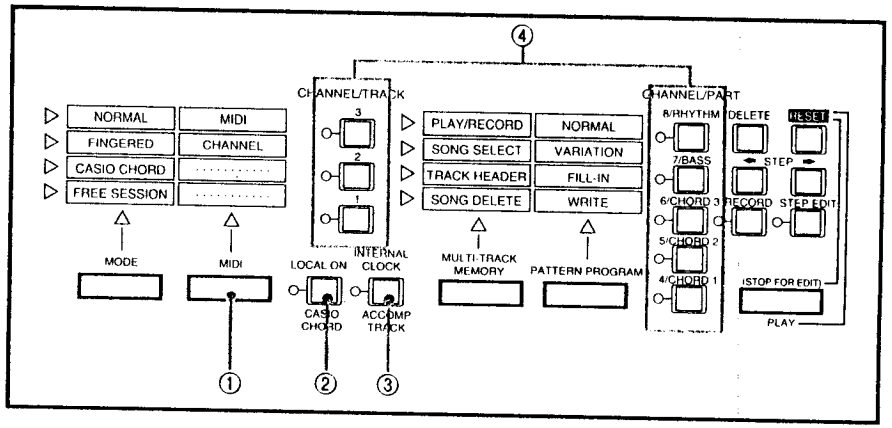


① **MODE button**
Used to enter the Normal Mode or select one of the functions in the Auto-Accompaniment Mode.

② **CHANNEL/TRACK 1 button**
Used to switch keyboard sound on and off.

③ **Accompaniment part on/off buttons**
- 8/RHYTHM button — switches rhythm part on and off.
- 7/BASS button — switches bass part on and off.
- 6/CHORD3 button — switches chord 3 part on and off.
- 5/CHORD2 button — switches chord 2 part on and off.
- 4/CHORD1 button — switches chord 1 part on and off.

<MIDI Mode>



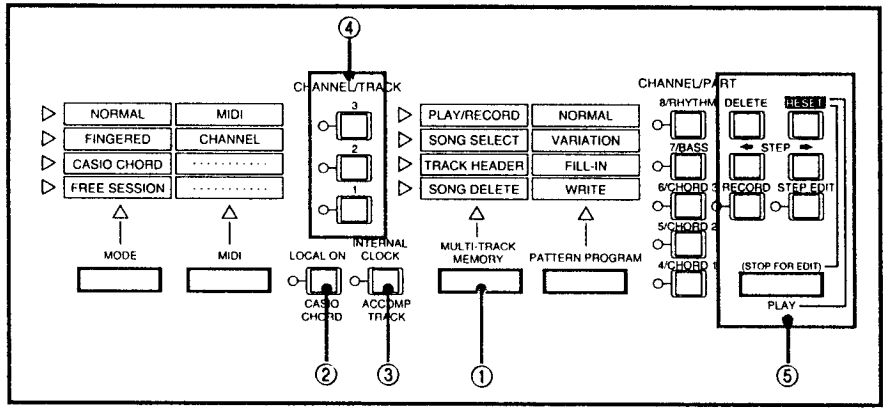
① **MIDI button**
Used to enter the MIDI Mode and select one of the MIDI functions.

② **LOCAL ON button**
Used to set Local Control on and off.

③ **INTERNAL CLOCK button**
Used to set Internal or External clock.

④ **Channel buttons**
- Used to set the basic channel of the CTK-1000
- Used to switch each channel's sound on and off

<MULTI-TRACK MEMORY Mode>



① **MULTI-TRACK MEMORY button**
Used to enter the Multi-Track Memory Mode and select one of the Multi-Track Memory functions.

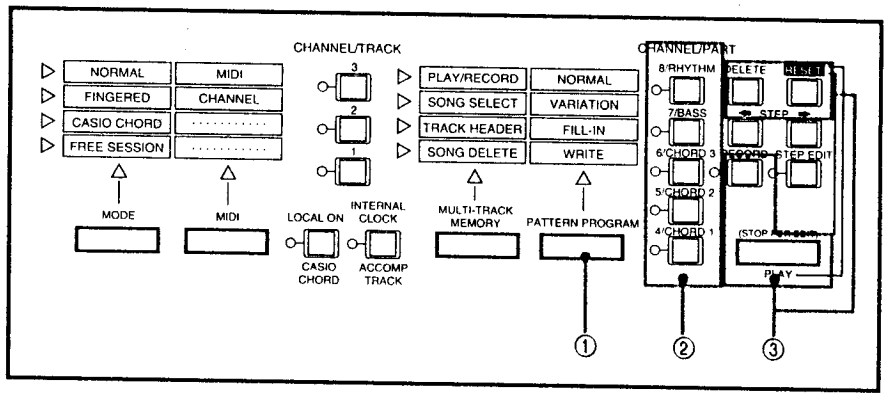
② **CASIO CHORD button**
Used to select CASIO CHORD fingering when recording Accompaniment track of the Multi-Track Memory.

③ **ACCOMP TRACK button**
Used to select Accompaniment track for recording.

④ **CHANNEL/TRACK buttons (1, 2, 3)**
Used to select one of the melody tracks for recording.

⑤ **Recording/Playback control buttons**
Used to perform the Multi-Track Memory recording, editing, playing back, etc.

<PATTERN PROGRAM Mode>

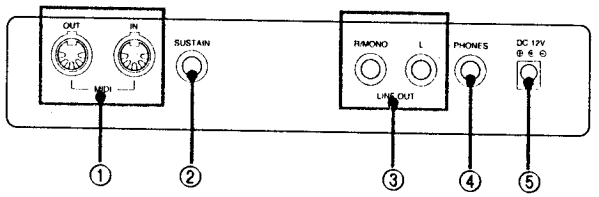


① **PATTERN PROGRAM button**
Used to enter the Pattern Program Mode and select one of the Pattern Program functions.

② **Accompaniment part select buttons**
Used to select one of the accompaniment parts for editing.

③ **Recording control buttons**
Used to record to the Pattern Program.

External Connections



① **MIDI terminals**
For connection of other MIDI instruments and devices.

② **SUSTAIN jack**
For connection of an optional sustain pedal (SP-2/SP-10).

③ **LINE OUT jacks**
For connection of keyboard amplifiers, external speakers, audio equipment, etc.

④ **PHONES jack**
For connection of commercially available headphones. Output from the speakers is automatically cut when headphones are connected.

⑤ **DC 12V jack**
For connection of an optional AC adaptor AD-12.

■ Specifications

Model	CTK-1000
Keyboard:	61 standard-size keys; 5 octaves; Touch Response (can be switched on and off)
Digital Effects	
Types	8: HALL REVERB, ROOM REVERB, DELAY, STEREO DELAY, STEREO CHORUS, FLANGER, DISTORTION, CHORUS REVERB
Effect Editor (Quick Editor)	Two parameters plus effect intensity
Tones:	100 presets plus 100 user tones
Polyphony:	16-note (maximum polyphony including the accompaniment)/15-note (maximum polyphony in the Normal mode when the rhythm is not running)
Auto Accompaniment	
Rhythm Patterns	100 presets plus 10 user patterns
Tempo	Adjustable (♩ = 40 to 255)
Chords	Three systems: CASIO CHORD, FINGERED, FREE SESSION
Parts	Five: CHORD 1, CHORD 2, BASS, RHYTHM; individual on/off; individual volume adjustment
Other	Variation pattern, fill-in pattern, intro/ending pattern for each rhythm
Registration Memory	10 setups
Contents	Tone number, rhythm number, Tempo, Touch Response on/off and sensitivity, bend range, Mixer parameters (VOLUME, PAN, EFFECT DEPTH)
Mixer	VOLUME, PAN, EFFECT DEPTH
Multi-Track Memory	
Tracks	Three, plus one accompaniment track
Songs	Two (maximum)
Notes	Approximately 3,200
Resolution	96 clocks/quarter note
System	Real time
Demo Tunes	5
Other Functions	
Pitch Bender	4 half-tones (maximum)
Tuning	Adjustable A4 = 440Hz 100 cents
Speakers	12 cm diameter x 2 (Output: 5W + 5W)
I/O Terminals	
Power Supply	12V DC jack
Headphones	Stereo standard jack
Line Out	Left/MONO, Right standard jacks; output impedance 3.2kΩ; output voltage 1.6V (RMS) max.
Sustain Pedal	Standard jack
MIDI	IN, OUT
Power Supply	2-way
Batteries	Six D-size
Battery Life:	approximately 3 hours on R20P (SUM-1) manganese batteries/8 hours on LR20 (AM-1) alkaline batteries
AC	AD-12 AC adaptor
Auto Power Off	Approximately 6 minutes after last key operation.
Power Consumption	18W
Dimensions	967 mm (W) x 414 mm (D) x 144 mm (H) 38 1/16" (W) x 16 5/16" (D) x 5 11/16"(H)
Weight	6.9 kg (without batteries) 7.6 kg (with batteries)
Accessories	Score stand

Design and specifications are subject to change without notice.

Model **CTK-1000**

MIDI Implementation Chart

Version: 1.0

Function ...		Transmitted	Recognized	Remarks
Basic	Default	1	1-8	*1
Channel	Changed	1-8	X	
Mode	Default	Mode 3	Mode 3	
	Messages	X	X	
	Altered	**********	**********	
Note Number:	True voice	36 - 96 **********	0-127 36 - 96	
Velocity	Note ON	O 9n v = 1-127	O 9n v = 1-127	
	Note OFF	X 9n v = 0	X 9n v = 0, 8n v = XX	XX = no relation
After Touch	Key's	X	X	
	Ch's	X	X	
Pitch Bender		O	O	*2
Control Change	00	O	O	Bank select (MSB) *3
	01	X	O	Modulation *2
	07	O	O	Volume
	10	O	O	PAN *2
	32	O	O	Bank select (LSB) *3
	64	O	O	Damper pedal *2
	91	O	O	Effect depth *2
Program Change:	True #	O 0-99 **********	O 0-99	
System Exclusive		X	X	
System Common	: Song Pos	X	X	
	: Song Sel	X	X	
	: True	X	X	
System Real Time	: Clock	O	O	
	: Commands	O	O	
Aux Messages	: Local ON/OFF	X	X	
	: All notes OFF	X	X	
	: Active Sense	X	X	
	: Reset	X	X	

Remarks

*1 Transmitted/Recognized only in the MIDI mode.
*2 Not recognized on channel 8.
*3 Bank select can be sent/received with a set of control change messages 00 (MSB) and 32 (LSB).
*4 You can switch between Internal and External clock using the INTERNAL CLOCK button.

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

■USER TONE LIST

No.	Tone Name	Base Preset	ATTACK (0~9)	RELEASE (0~9)	WAVE (0~9)	Comment

■USER RHYTHM

USER Rhythm No. (0 - 9) _____ Base Preset _____

Rhythm Name _____ Comment _____

Pattern Program

	RHYTHM	BASS	CHORD		
			1	2	3
NORMAL	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____
VARIATION	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____
FILL-IN	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____	❑ Original ❑ Edited Tone No. ____

■REGISTRATION

Registration No. (0 - 9) _____ Comment _____

Tone No. (00 - 99) _____
Rhythm No. (00 - 99) _____
Tempo (40 - 255) _____

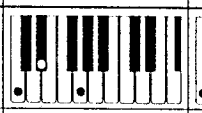
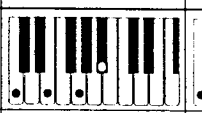
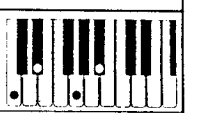
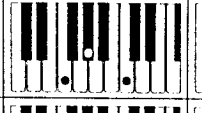
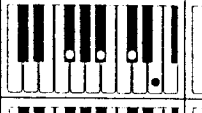
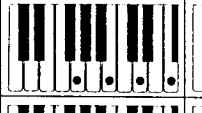
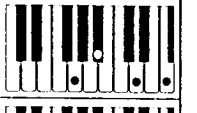
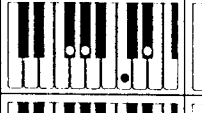
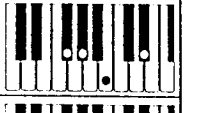
Touch Sensitivity (0 - 9) _____
Bend Range (0 - 4) _____

Touch Response ON / OFF
Effect type _____

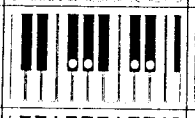
MIXER
- VOLUME (0 - 9) _____
- PAN (0 - 9) _____
- EFFECT DEPTH (0 - 9) _____

Make copies of this page before filling in data.
Realice copias de esta página antes de llenarla de datos.

■ List of Fingered Chord
■ Lista de acordes digitados

Root \ Chord Type	Major	Minor	7th	m7
C				
C♯/(D♭)				
D				
(D♯)/E♭				
E				
F				
F♯/(G♭)				
G				
(G♯)/A♭				
A				
(A♯)/B♭				
B				

Root \ Chord Type	M7	m7-5	dim	aug
C				
C♯/(D♭)				
D				
(D♯)/E♭				
E				
F				
F♯/(G♭)				
G				
(G♯)/A♭				
A				
(A♯)/B♭				
B				

Root \ Chord Type	sus4	7sus4	m9	mM7
C				
C♯/(D♭)				
D				
(D♯)/E♭				
E				
F				
F♯/(G♭)				
G				
(G♯)/A♭				
A				
(A♯)/B♭				
B